WILDLIFE ECOLOGY

A NATURAL HISTORY STUDY of BEXHILL·on·sea

BOOK 2 - WOODLAND
GRASSLAND
WETLAND
PONDS & STREAMS

THIS BOOK IS A PERSONALIZED COPY BELONGING TO .....

Mr and Mrs WALSH

.....

FOR ATTENDING THE BASIC COURSE ON LOCAL WILDLIFE ECOLOGY AND NATURAL HISTORY AT BEXHILL COLLEGE GIVEN BY HASTINGS COLLEGE OF ARTS AND TECHNOLOGY DEPT. OF ADULT AND COMMUNITY EDUCATION

TO PROMOTE AN AWARENESS OF OUR VANISHING WILDLIFE AND THE HABITATS WHERE THEY LIVE.

ILLUSTRATIONS AND TEXT BY DEREK BATES..... 1986

THE WOODLAND HABITAT

The county of Sussex is one of the most wooded in Britain, and the following list of trees are the true native trees of Bexhill which have existed since the last ice age about 10,000 years ago (at that time Britain was part of the European land mass.)
As the climate grew warmer trees like the Hazel, Scots Pine, Birch and Elm established themselves in Britain and then about 7000 years ago the English channel was formed by melting glaciers and so formed a natural barrier.
There were 35 species of tree in Britain at that time which establishes our native trees.
Descendants can be found in Bexhill today:-

Pedunculate oak.
Common Alder
Aspen.
Common Ash
Beech
Yew
Crab Apple
Crack Willow
Birch
Field maple
Hawthorn
Hazel
Holly
Hornbeam
Rowan
Scots Pine
Sessile Oak - not common in Bexhill - Have you seen this tree?
Small leaved Lime
Wych Elm.
Strawberry tree.

During the past 7000 years These trees have grown naturally over the County without the assistance of man.
There are 35 different species native to Britain.

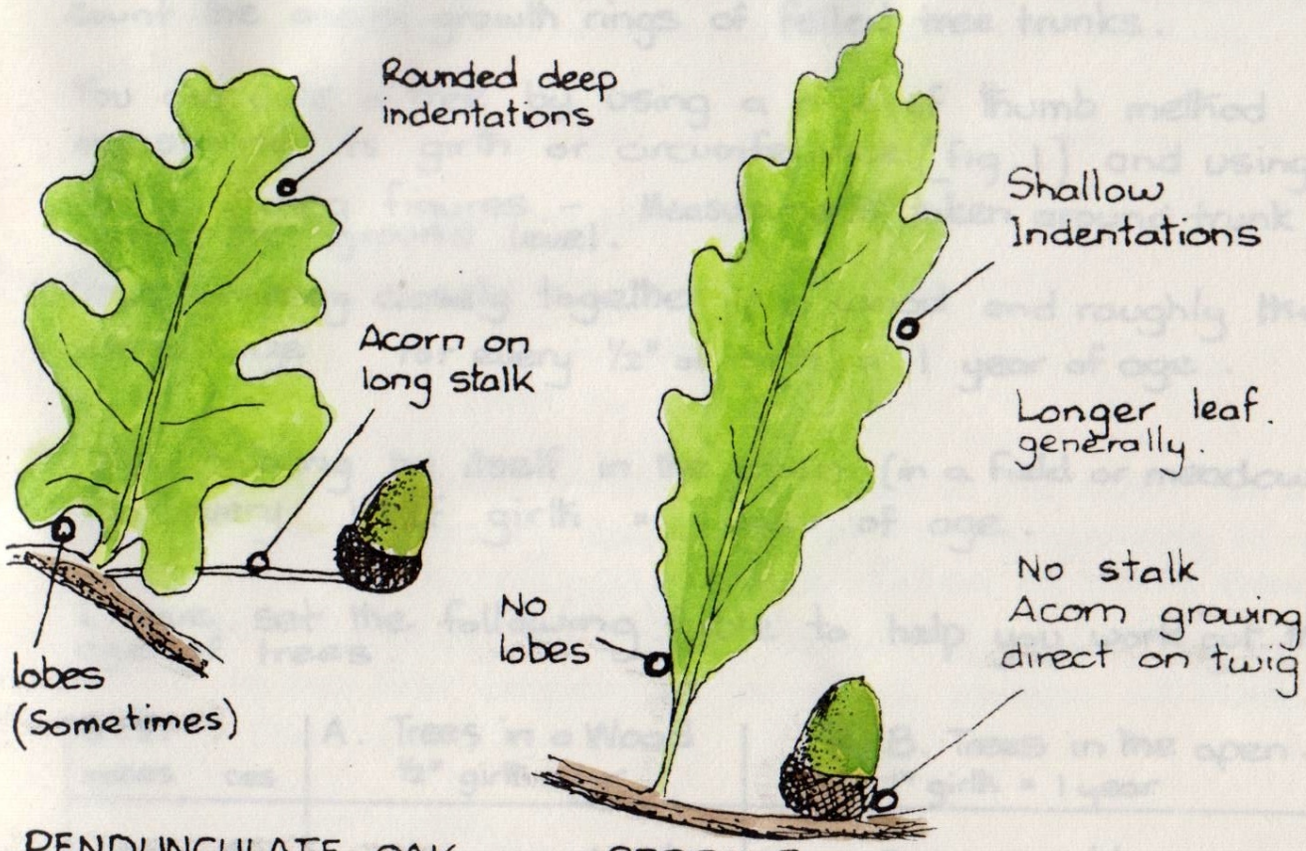
Male catkins of the Alder

Sweet Chestnut (Romans)
Horse Chestnut (17th Century)
Walnut (Romans)
Cedar (17th Century)
Norway spruce (Christmas tree)
Sycamore (16th Century)

Other ornamental trees

These trees introduced by man.

THE WOODLAND HABITAT



PENDUNCULATE OAK SESSILE OAK

Can you spot the difference!

PROJECT

When you next go on a woodland walk look under oak trees growing in area and bring :-

1. Sample of a leaf (flatten under a book)
2. Sample of the acorn (from the same tree as the leaf).

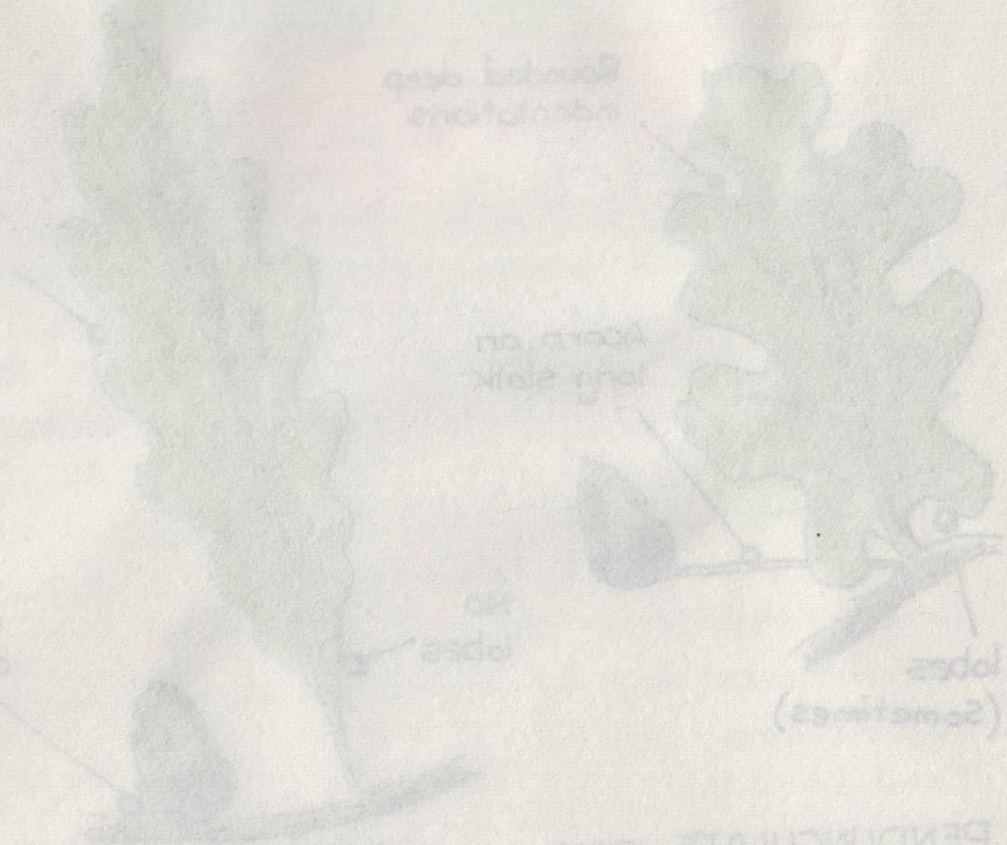
TREES - GENERAL :-

Deciduous trees (Broadleaved) .... Hardwood

Coniferous trees (Needle leaved) .... Softwood

A tree grows from the tips of branches by adding more wood. The trunk increases in girth not height. If a branch rises with a growing trunk, a childs swing hung from that branch would slowly rise out of reach - which is ridiculous!.

If a section of a trunk is studied each ring represents one years growth - dry years can be seen if the rings are closer together.



ESTIMATING THE AGE OF A TREE

Count the annual growth rings of felled tree trunks.

You can date a tree by using a rule of thumb method measuring its girth or circumference (fig. 1) and using the following figures:- Measurements taken around trunk 5 feet above the ground level.

A. Trees growing closely together in a wood and roughly the same size For every ½" of girth = 1 year of age.

B Tree growing by itself in the open (in a field or meadow) For every 1" of girth = 1 year of age.

I have set the following table to help you work out the age of trees.

Girth inches cms	A. Trees in a Wood ½" girth = 1 yr	B. Trees in the open. 1" girth = 1 year
2" or 5	4 years old.	2 years old.
4" or 10	8 "	4 "
6" or 15	12 "	6 "
8" or 20	16 "	8 "
10" or 25	20 "	10 "
20" or 51	40 "	20 "
30" or 76	60 "	30 "
40" or 102	80 "	40 "
50" or 127	100 "	50 "
60" or 152	120 "	60 "

A tree growing on the edge of a woodland (Not hemmed in) could be taken as ¾" of girth for every year. (or between the above figures).

These figures are only approximate, but it is a recognized method which has been worked out for average rate of growth. and found suitable for most trees.

Note: These figures however should not be used for Yew trees and some coniferous (the latter has very rapid

rate of growth in comparison to the deciduous trees). We know that Yew trees attain great age by Historic records. but their growth rate fluctuates, similarly the trunk is difficult to measure.

A rough guide to the age of a yew tree is as follows:-

8 feet girth = 100 to 150 years old.
16 feet " = 300 to 400 years old.
20 feet " = 500 to 600 " "
30 feet " = 850 to 1000 " "

Care should be taken measuring a tree in the open as it may of course already spent part of its life growing in a wood and the surrounding trees felled at some time or other. Evidence of this is usually apparent by the height to the first branch or remaining stumps of felled trees. (see fig 2

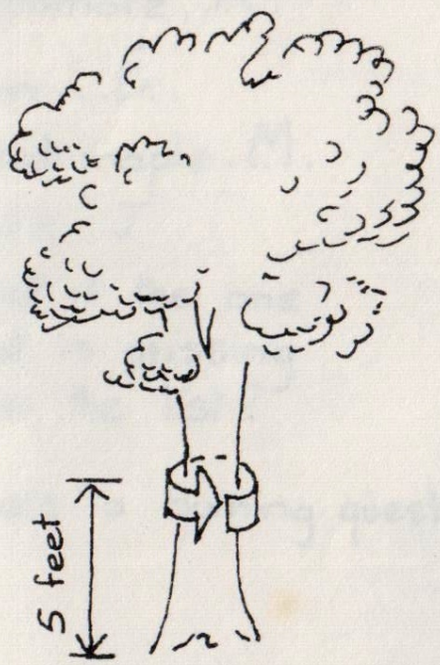


Fig 1

Measuring girth of a tree.

Fig 2.

Typical tree growing in a wood. Tall and branches high Narrow spread.

Fig.3.

Typical tree growing singularly and in the open. Thick trunk Low branches. Wide spread.

Questions

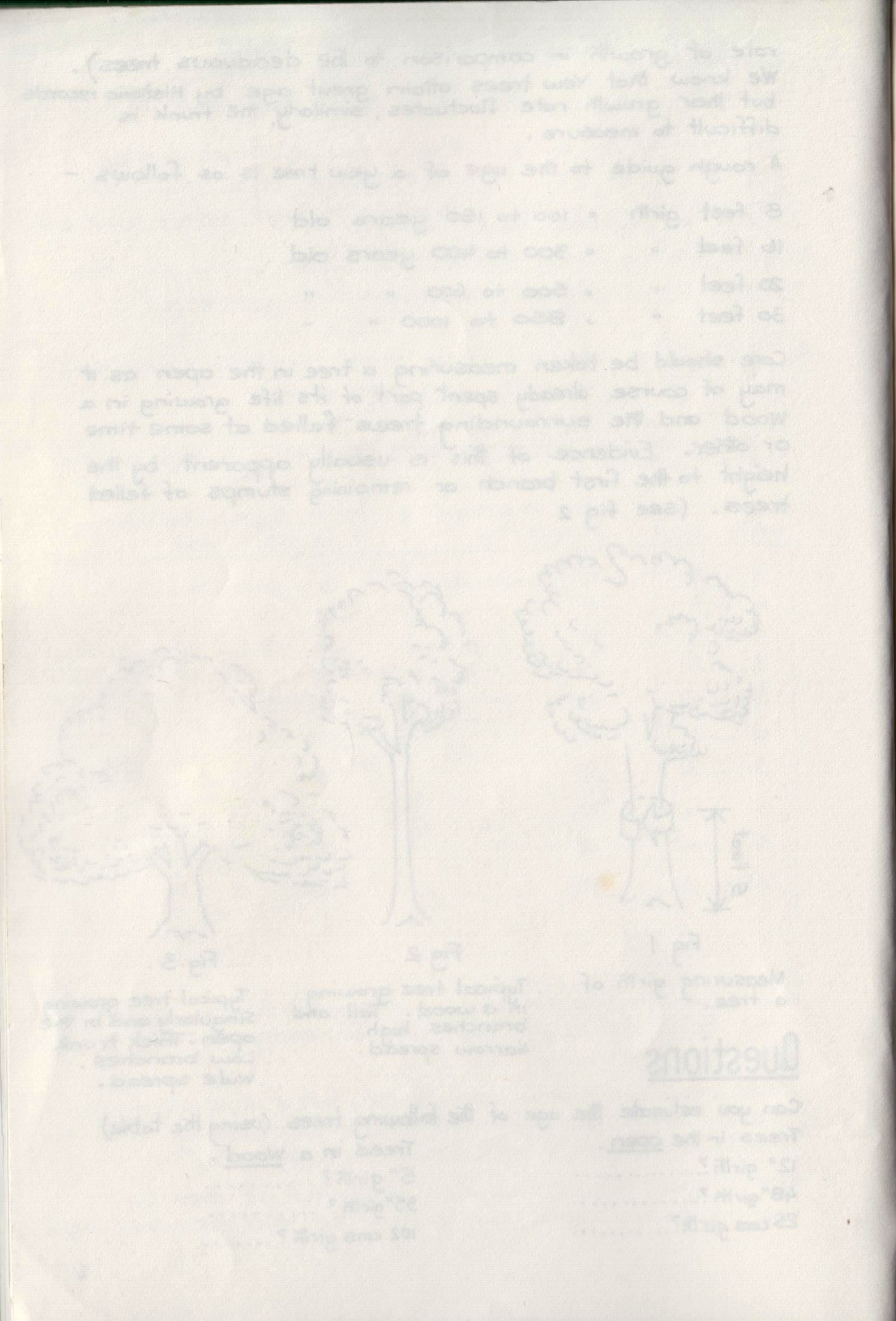
Can you estimate the age of the following trees (using the table)

Trees in the <u>open</u>.

12" girth?.....
48" girth?.....
25 cms girth?.....

Trees in a <u>Wood</u>.

5" girth?.....
35" girth?.....
102 cms girth?.....

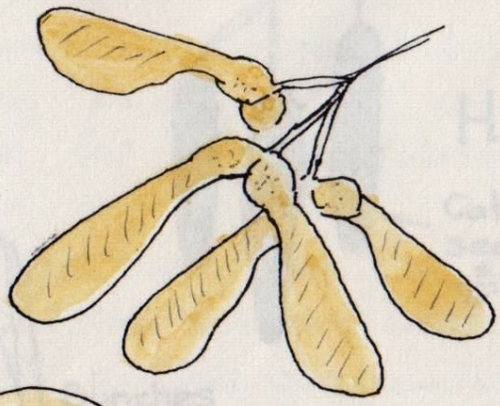


CAN YOU MATCH THE FRUIT WITH THE FOLLOWING TREES ?

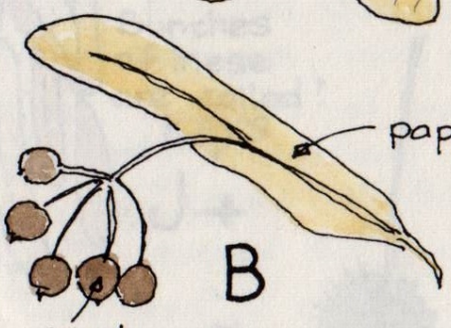
Beech ..F....
Pedunculate Oak ..I...
Yew C
Horse chestnut ..D...
Lime ..B.
Hornbeam ....P
Sweet Chestnut..O
Scots Pine .N..
Birch .H..
Hazel L
Plane ....K
Alder ....G..
Sycamore ..A..
Elm ...E..
Field maple .M..
ASH J

What is the one that is missing from the list?

(Thats a burning question!)



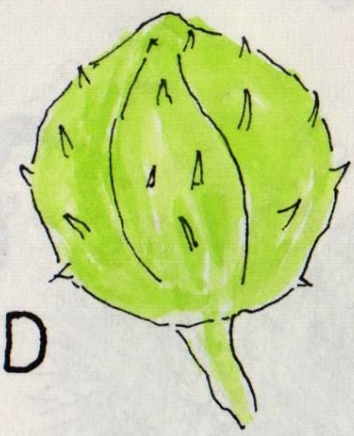
A +



B

Red fleshy fruit with hard dark seed inside

C

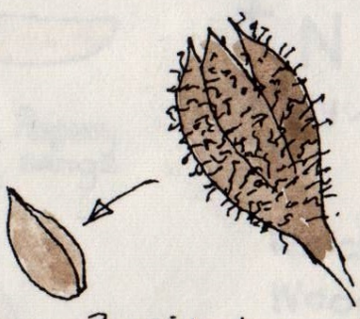


Seed inside shell

D

flat papery seed

E



\+

F

3 sided seed inside called ? .....

Continued over ▷

+...Denotes example available.

CAN YOU MATCH THE FRUIT WITH THE FOLLOWING TREES ?

A

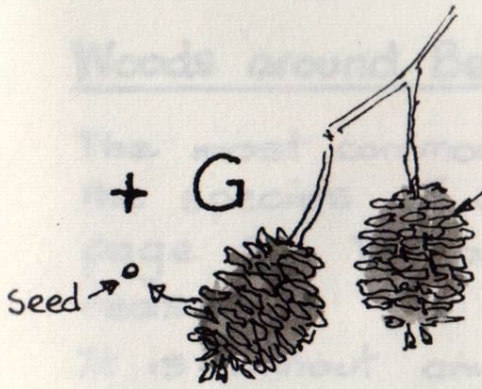
B

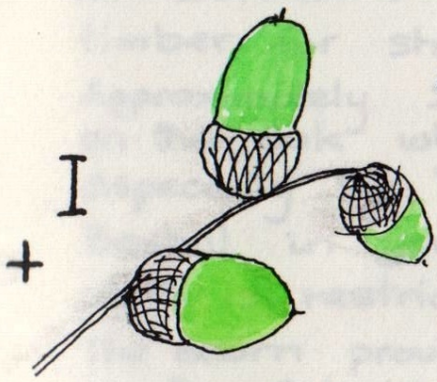
C

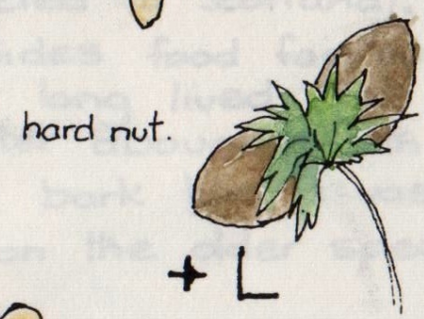
D

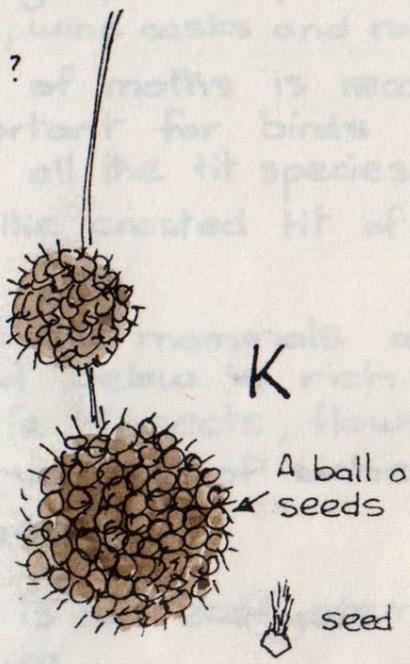
E

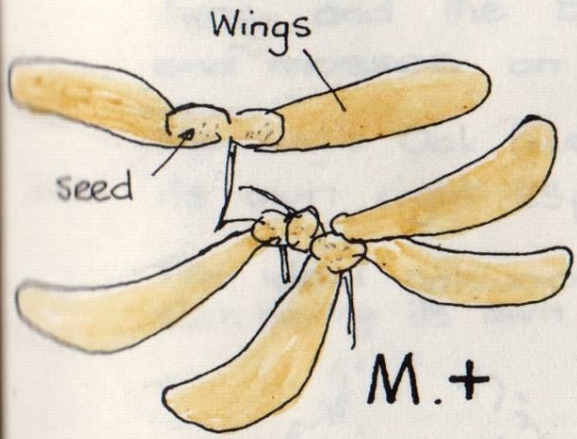
F

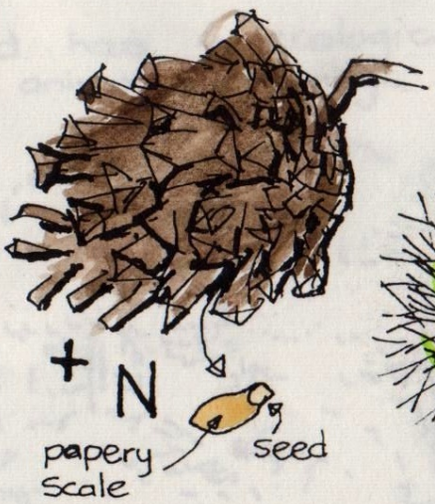


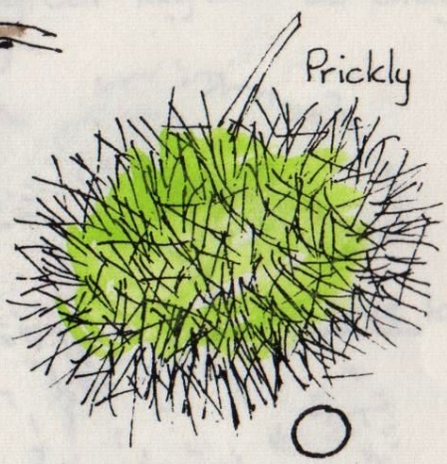


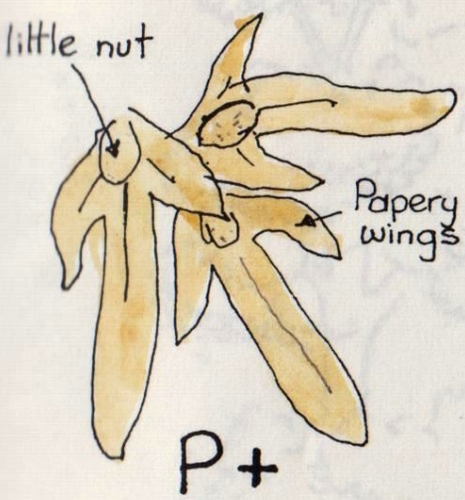






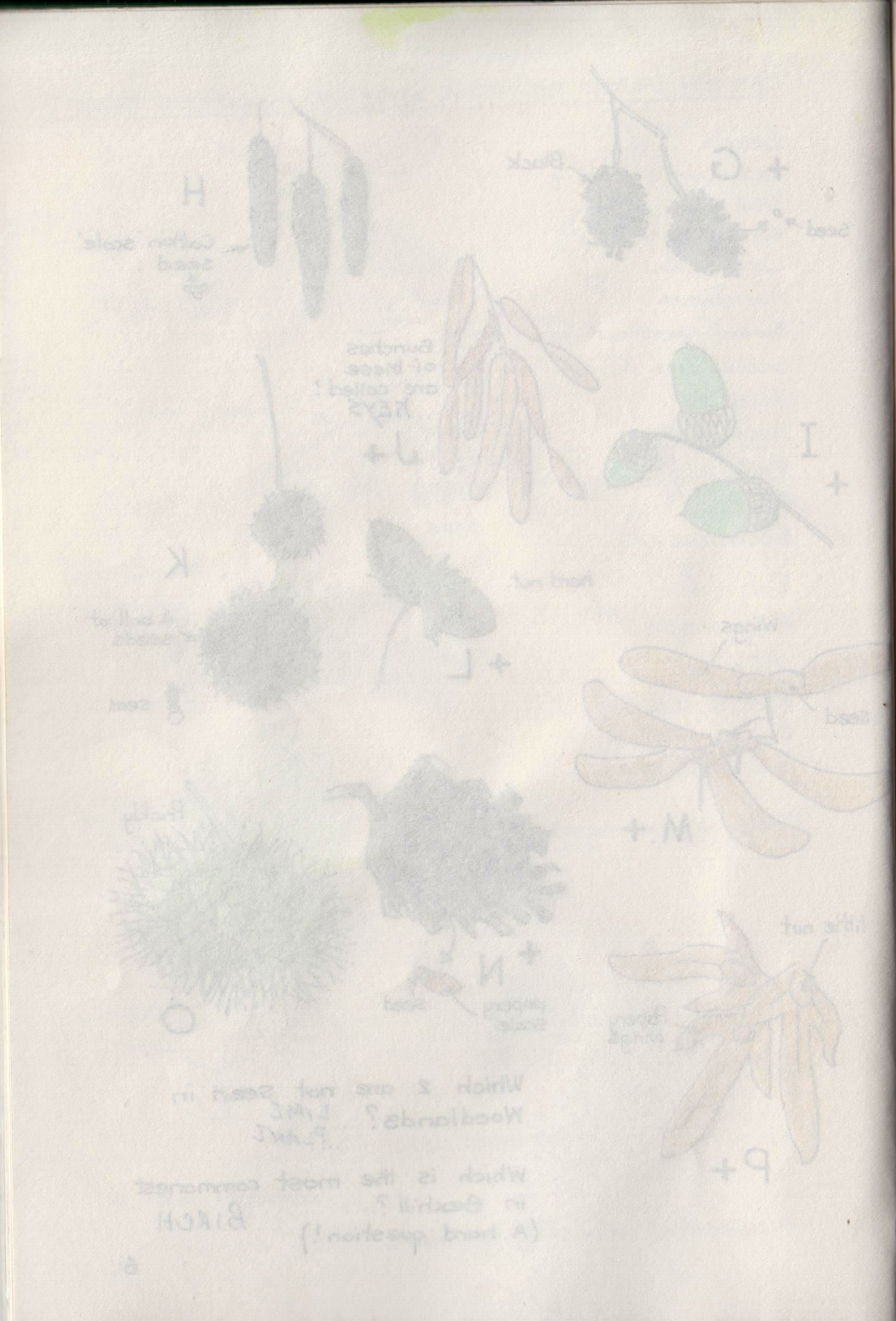






Which 2 are not seen in Woodlands? .. LIME
.... PLANE

Which is the most commonest in Bexhill? BIRCH
(A hard question!)



Woods around Bexhill

The most common woodland around Bexhill is oakwoods the species of oak being 'Pedunculate' as shown on page 2. Its preference for a clay subsoil is the reason.

It is without any doubt the best tree for wildlife. Historically the oak woods in Sussex have been used for Iron workings, (Roman), making gunpowder, tanning, timber for ships, beams in cottages, wine casks and rungs.

Approximately 240 different species of moths is recorded on the oak which are vitally important for birds especially the Tit family. We have all the tit species in Bexhill in good numbers (except the crested tit of course which is restricted to Scotland).

The acorn provides food for birds and mammals and as the Oak is long lived the soil below is rich and the leaf litter abounds with life. Insects, flowers, & Fungi and the bark has a vast variety of Lichens and mosses on the older specimens.

The single Oak tree as you can see is an ecosystem in its own right especially if its mature.

The ideal oakwood has 4 ecological layers as diagram each having its own animal community.

Ground layer ..... Small plants, grasses, leaf litter.

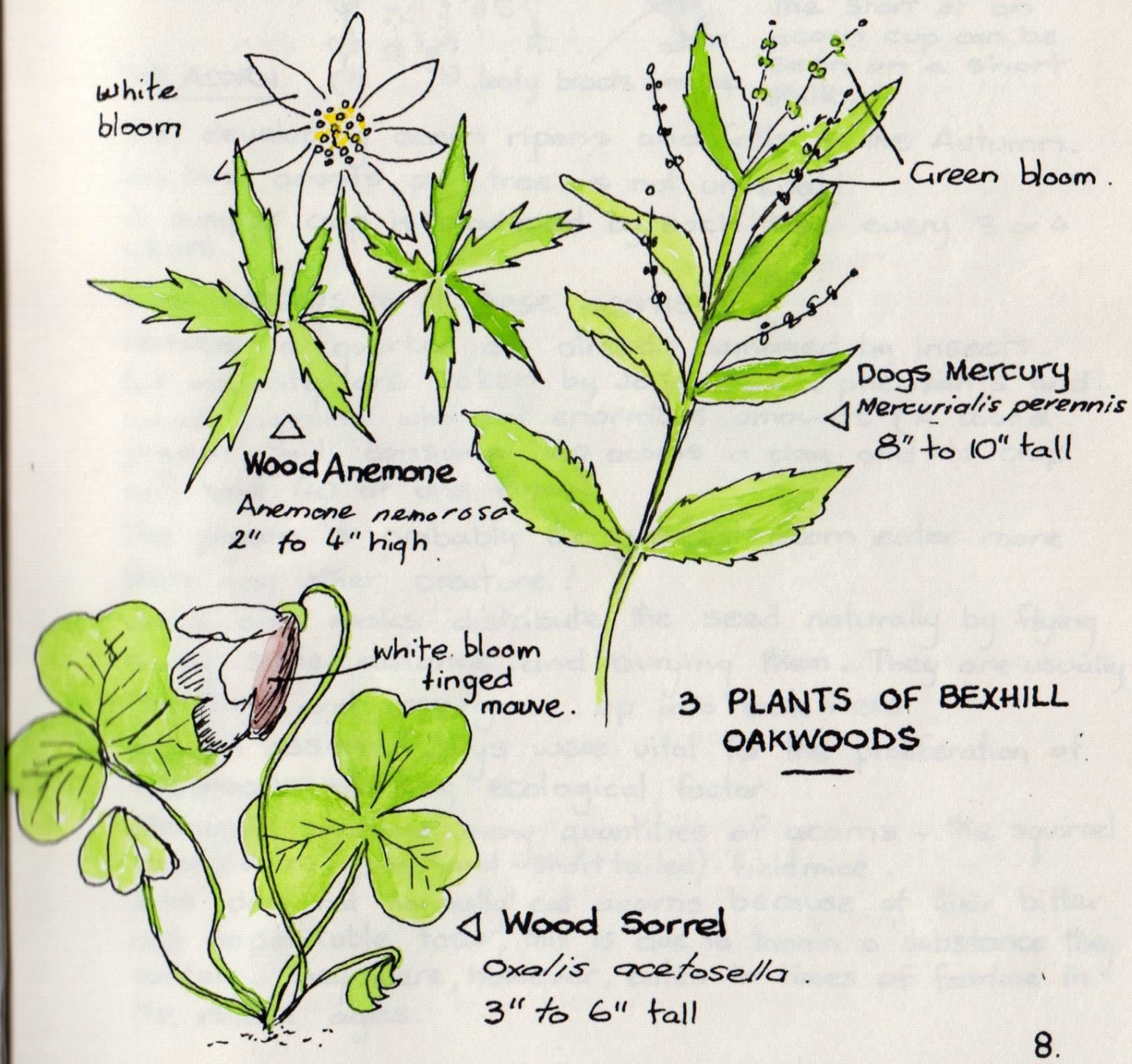
Field layer ..... tall plants, ferns.

Shrub layer ..... Bushes and young trees

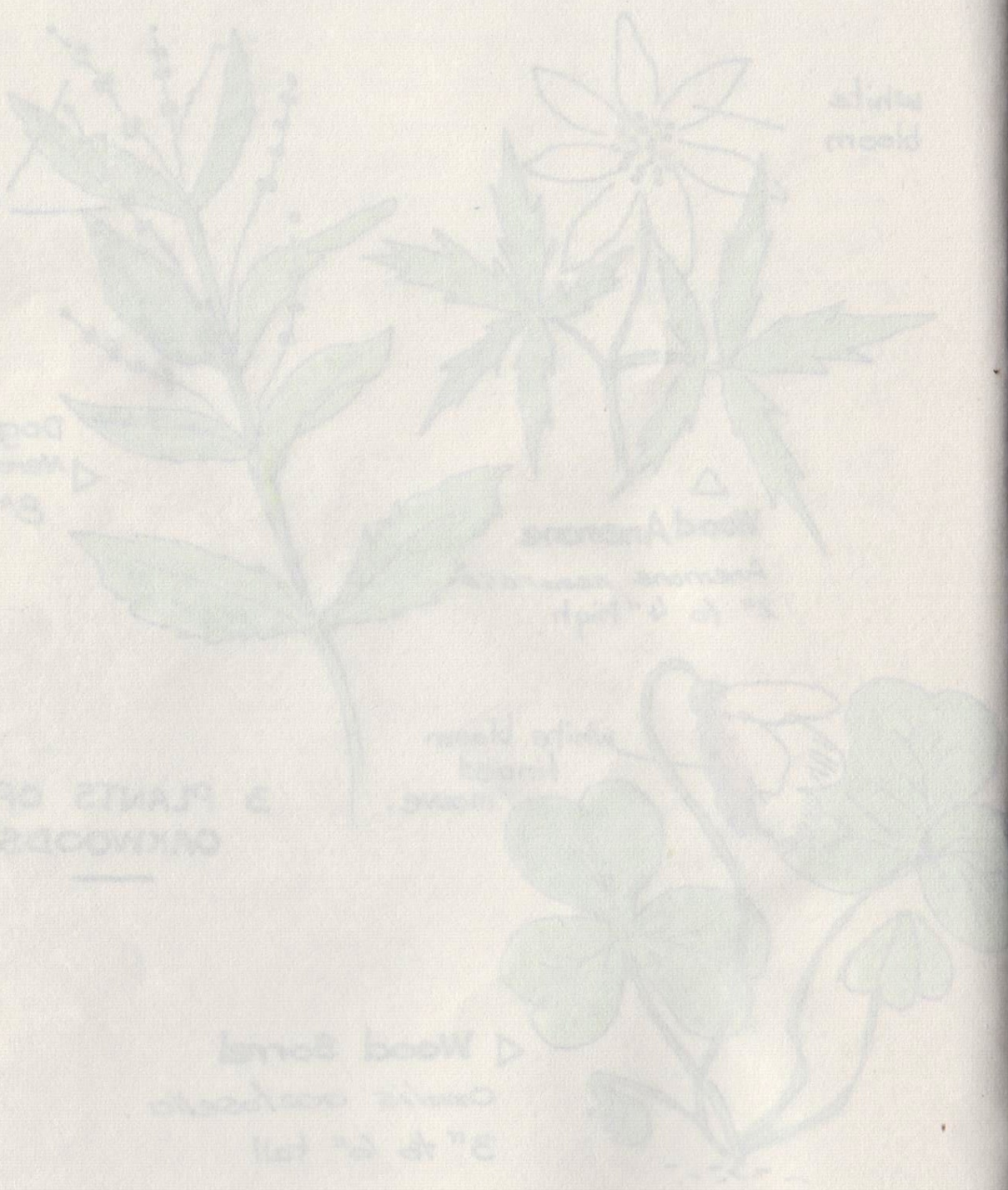
Tree layer ..... Canopy and crown of mature trees

Note that all four layers may exist where the wood is open and sunlight reaches the woodland floor - glades, rides and woodland edges.

In studies of life in an oakwood, the 'layer' should be recorded where the particular plant or animal is found or observed.

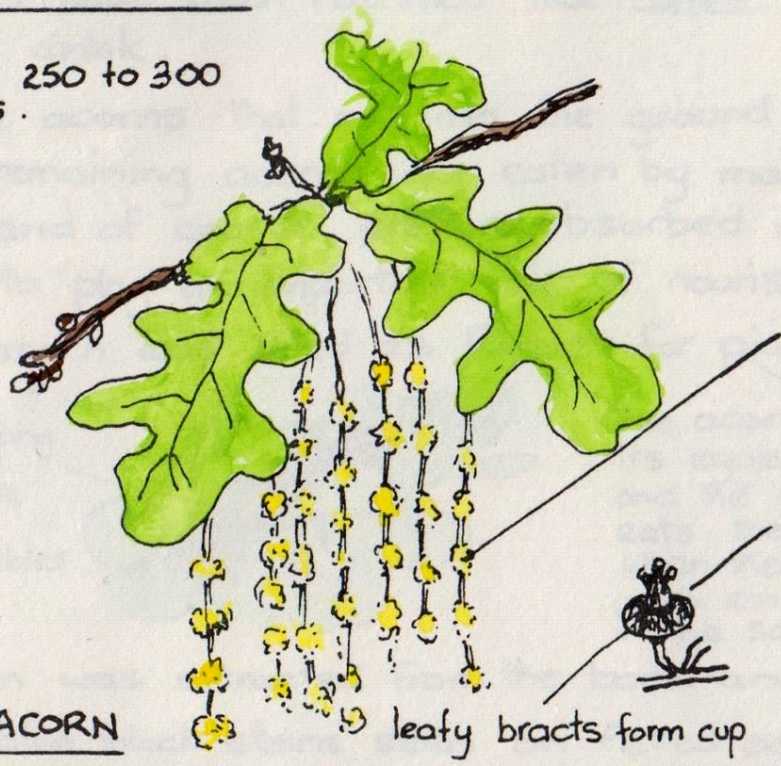


3 PLANTS OF BEXHILL OAKWOODS



THE OAK TREE continued.

Lives 250 to 300 years.



The fertilizing pollen is windblown.

The yellow green tassles of the male flower in May.

The inconspicuous female flower has a red stigma and the start of an acorn cup can be seen on a short stalk.

leafy bracts form cup

THE ACORN

The developing acorn ripens and falls in the Autumn. (50,000 acorns per tree is not unusual)
A bumper crop is produced by each tree every 3 or 4 years.

What happens to all these acorns?-
Perhaps a quarter are already damaged by insects. But majority are taken by Jays, rooks, pheasants and wood pigeons who eat enormous amounts (A wood pigeon will consume 140 acorns a day and its crop will hold 40 at one time)

The pigeon is probably the greatest acorn eater more than any other creature!
Jays and rooks distribute the seed naturally by flying away some distance and burying them. They are usually forgotten and may grow up into oak trees
We can assume Jays were vital for the proliferation of oakwoods - a key ecological factor.
Mammals consume many quantities of acorns - the squirrel deer, voles, (bank and short tailed) fieldmice.
Man does not normally eat acorns because of their bitter and unpalatable taste, this is due to tannin a substance they contain. They were, however, eaten in times of famine in the middle ages.

Acorns have been roasted like coffee beans and used as a drink.

Those acorns that rot into the ground fertilize it. The remaining acorns are eaten by many other forms of life and of course are re-absorbed into the woodland soil to play an important role of nourishing the forest.

The acorn was used as fodder for pigs.

3/16" long weevil with its snout mandibles

The acorn weevil lays its eggs in the acorn and the developing grub eats the inside. When the acorn falls the grub emerges and pupates in the soil.

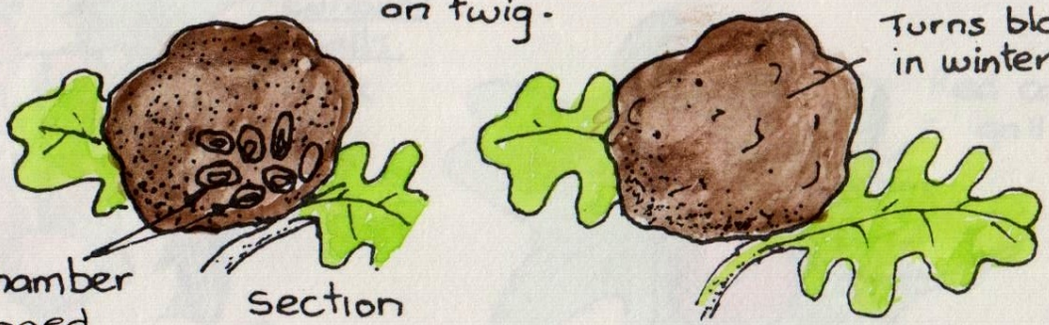
Tannin was extracted from the bark and used to tan hides.

The blue black stains seen on felled oak is a reaction between the iron of an axe and tannin. (Looks like old fashioned writing ink.)
Brass screws are used when fixing into oak as steel screws are badly corroded by the acid in the timber.

OAK GALLS.

Soft spongy oak apple gall on twig.

Turns black in winter



Each grub has its own chamber
Males - winged
Females - wingless

section

OAK APPLE GALL (1¼" diameter)
Biorhiza pallida

All oak galls are caused by tiny little winged insects called gall wasps of which there are 30 different species each having its own distinctive gall.

How are galls formed?

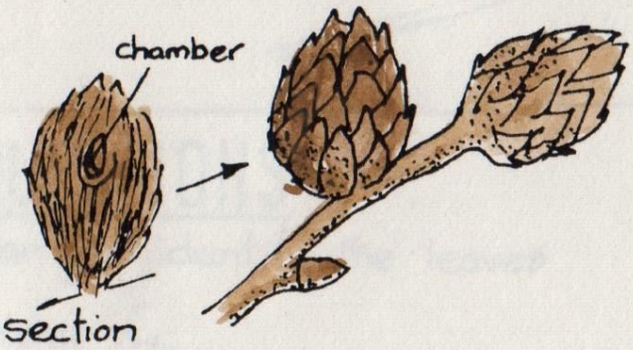
The winged female gall wasp lays eggs in a bud, leaf vein, flower or root depositing at the same time a substance same as the growing hormone of the tree. This produces abnormal growth called a gall. The eggs hatch into grubs (larvae) and grow inside the gall. Other galls are illustrated on page 11

GALL WASPS..... Cynipidae

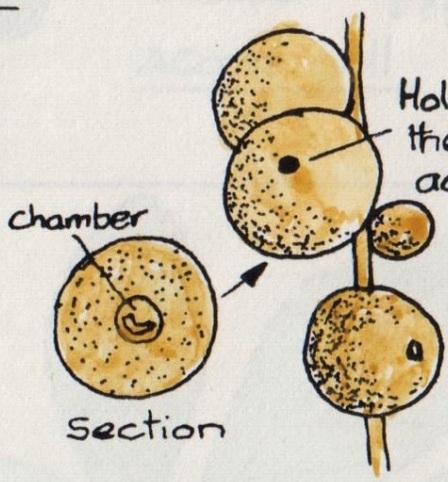
Actual Size

Does not resemble a wasp at all - it is very sombre coloured

A Oak 'marble' gall wasp.



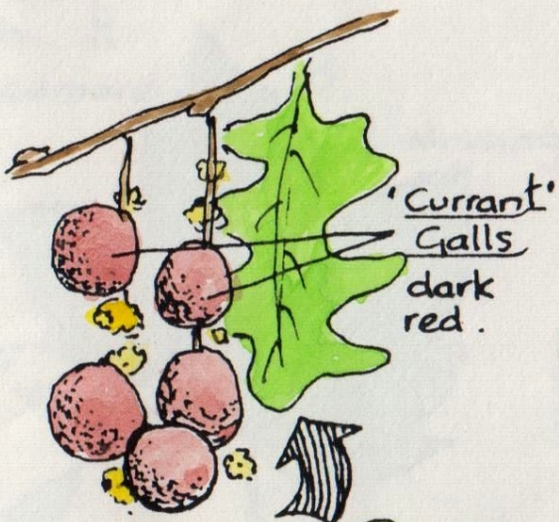
A oak 'Artichoke' gall.

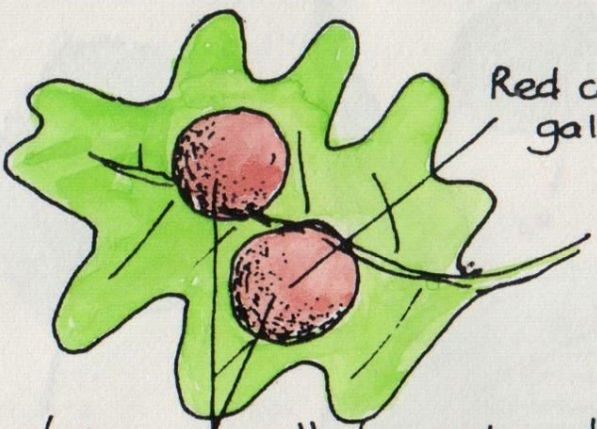


A. Oak 'Marble' gall

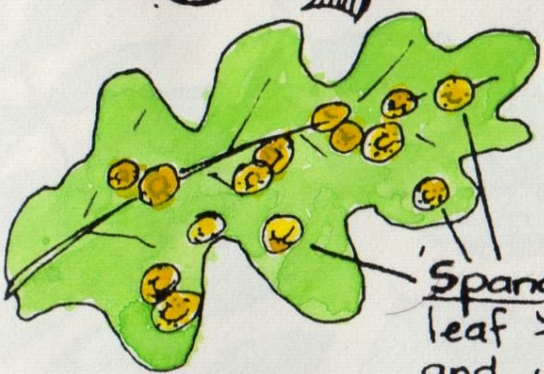
(Can reach 1" in diameter)

Introduced last century from the Middle East and the tannic acid used in dyeing and ink making.





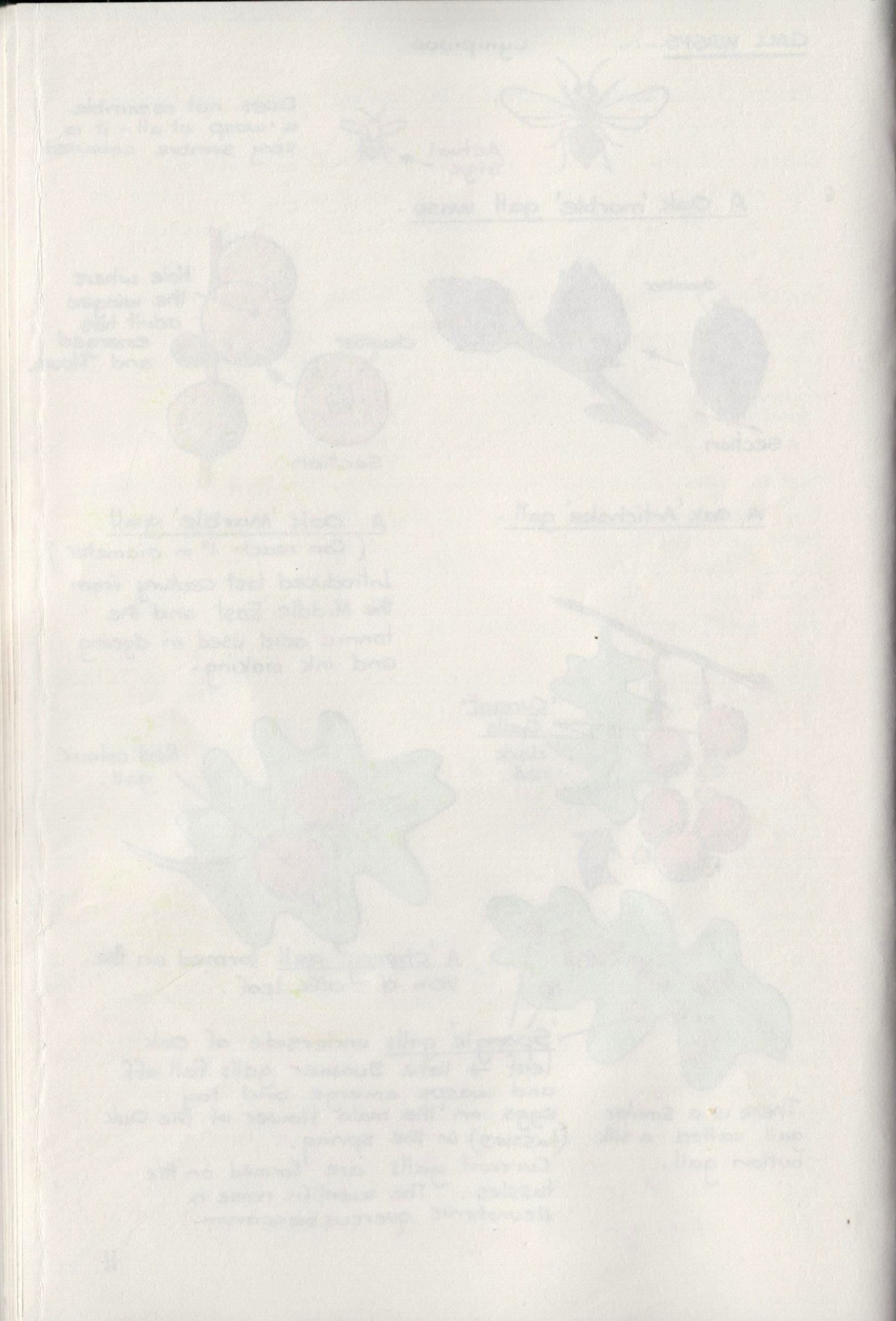
A 'cherry' gall formed on the vein of oak leaf.



'Spangle' galls underside of oak leaf → late Summer galls fall off and wasps emerge and lay eggs on the male flower of the Oak (tassles) in the spring.

Currant galls are formed on the tassles. The scientific name is Neuroterus quercusbaccarum.

There is a similar gall called a silk button gall.



This gall is green (same colour as acorn) and has only been recently found in Britain. It is common in Southern Europe and the Channel Islands.

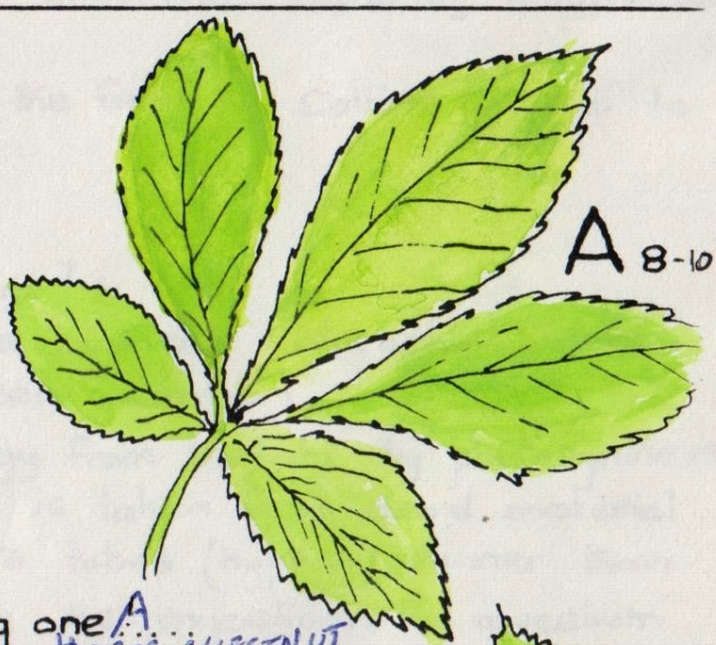
Dark brown in Winter after fall

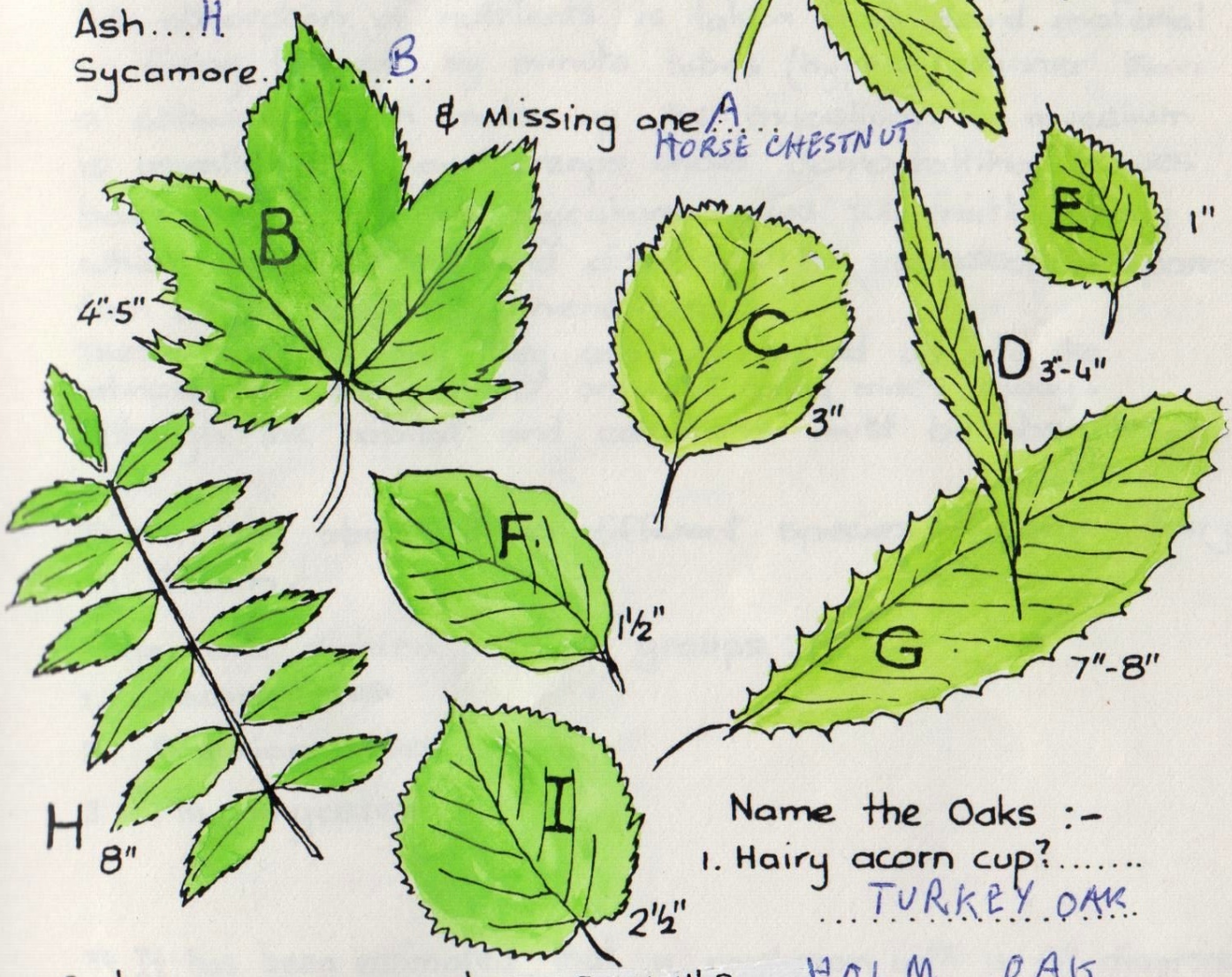
Acorn gall

QUESTIONS

Can you identify the leaves

Alder ..C...
Hazel ..I...
Birch ..E...
Willow ..D...
Sweet chestnut..G...
Beech ..F...
Ash...H
Sycamore.....B..
& Missing one A HORSE CHESTNUT

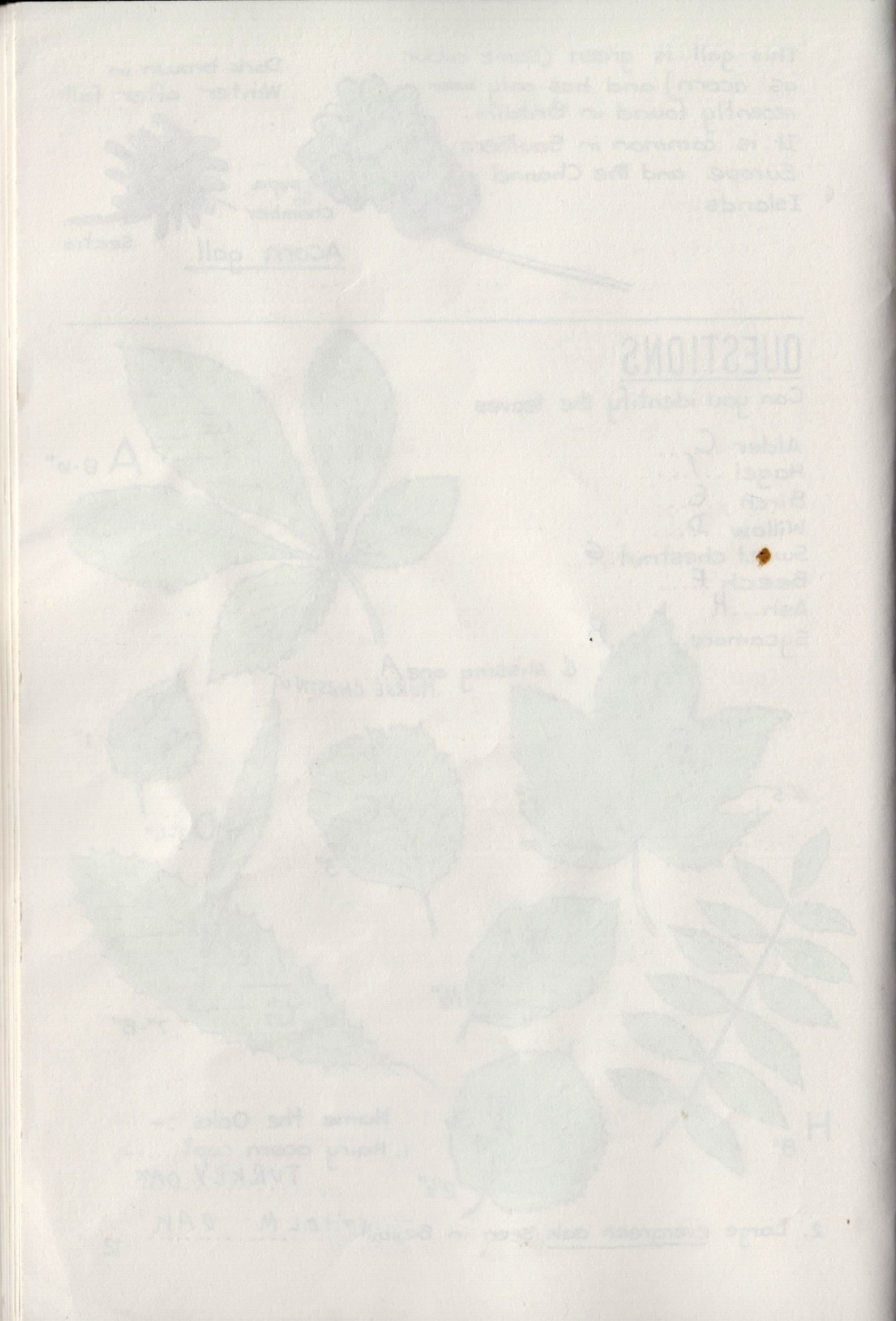




Name the Oaks :-

1. Hairy acorn cup? ..... TURKEY OAK.....

2. Large evergreen oak in Bexhill? ..... HOLM OAK .....



FUNGI

We are indebted to MRS Gill Winn-Ruffhead for giving a fascinating illustrated talk on Edible and Inedible Fungi. Here are a few notes of some of the fungi which can be found in local woodlands.

For identification the recommended book entitled 'MUSHROOMS and other fungi of Gt Britain' by Roger Phillips published by Pan Books is excellent - Superbly illustrated by photographs.

A smaller book for use in the field is Collins guide to MUSHROOMS & TOADSTOOLS.

FUNGI GENERAL

What is a mushroom or Fungi?

It is a plant that lacks the pigment Chlorophyll which other plants have by the green coloration.

It is unable to utilize energy from sunlight by photosynthesis. The absorption of nutrients is taken from dead material or living tissues by minute tubes (hyphae) thinner than a cobweb which make up the mycelium. The mycelium is usually white and creeps under damp rotting leaves, bark etc. From the mycelium grows the fruiting body which manufactures and disperses the microscopic spores* from which new specimens grow.

These are so tiny they can be carried up into the atmosphere and alight on land many miles away - although the habitat and conditions must be absolutely right.

There are about 3000 different species of 'larger' fungi in Britain.

Fungi are divided into 3 groups :-

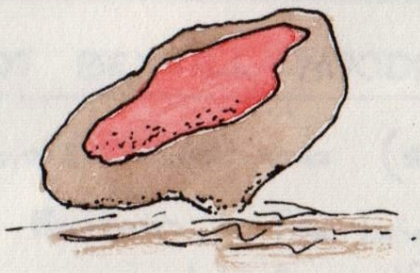
1. Ascomycetes
2. Basidiomycetes.
3. Phycomycetes.

* It has been estimated that a mushroom with a 4" diameter cap releases 16,000 million spores.

Ascomycetes

Group 1. includes : Truffles, (grows underground) Morels, cup fungi, Cramp balls (King Alfred's cakes) Moulds (on leather and colouring Stilton. and gorgonzola cheese) Mildews, (on oak) Yeast, Penicillin.

Morel.



cup fungi.

Truffel.

these very lucky should be found locally - rare.

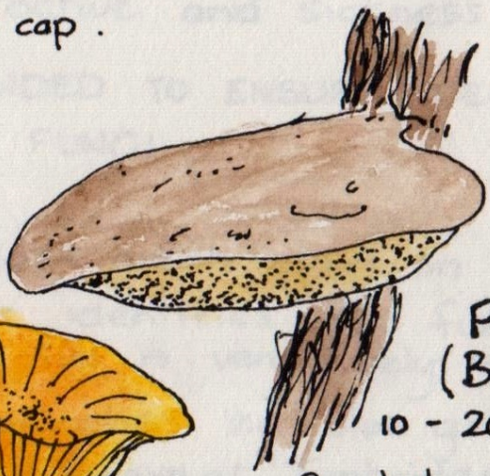
Basidiomycetes

This is the major Group and most diverse includes mushrooms, toadstools, puffballs, bracket fungi

Scarlet cap.

Cap.

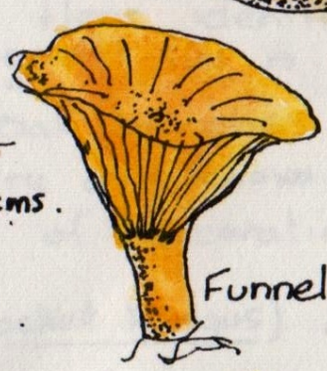
Fly Agaric 10-15cms. (Amanita)



Many little insects live in these fungi - mainly Beetles.

Polypore (Bracket fungus) 10 - 20cms across.

Bracket

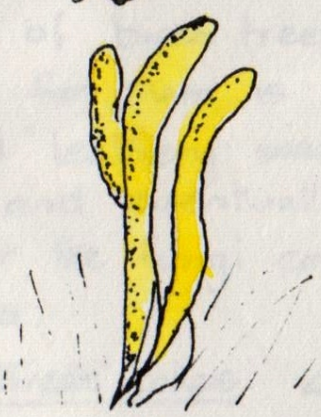


Funnel

Spores distributed by Vibration of falling raindrops

dry brown skin when mature

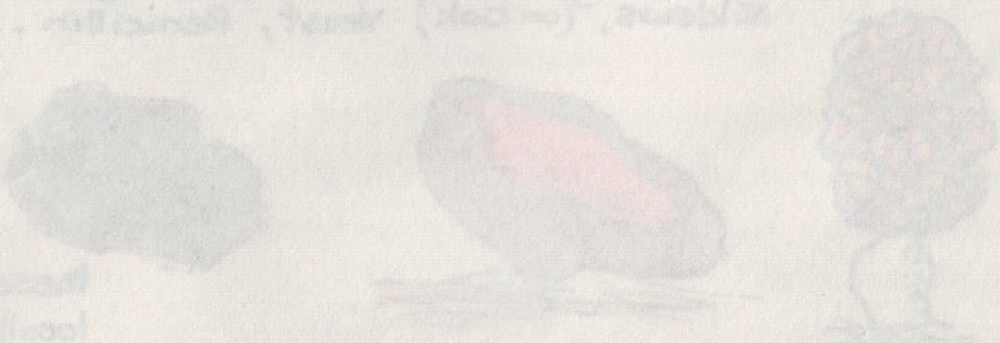
Puff ball



Club 5cms tall (up to 2")

foetid smell attracts flies which distributes spores

Stinkhorn. 10 - 20cms



Phycomycetes

This 3rd group includes the white and grey moulds which grow on bread, jam and other foods, 'White fungus' on aquarium fish, 'athlete's foot' on humans.

SOME FUNGI OF BEXHILL WOODLANDS.

Fly Agaric *amanita muscaria* (see page 14.) Autumn.

24 species in Britain - The bright scarlet caps with white chips is very common to Bexhill. It is poisonous although not fatal. The name comes from the practice of breaking the cap into milk (used in medieval times) to stupefy flies. It has strong haluncinatory and intoxicating properties if swallowed affects nervous system and the subjects state of mind. Following a death like sleep, the patient becomes highly active and sickness is induced.

STUDENTS ARE RECOMMENDED TO ENSURE IDENTIFICATION BEFORE CONSUMING ANY FUNGI.

Green Woodcup. A dark green stain on wood found on the woodland floor identifies this fungi. however, the tiny green cup is very rarely seen. Usually found on oak branches the blue green stain was used in Marquetry and known as 'Tunbridge Ware' a traditional method of decoration.

Birch Polypore (Bracket Fungus) *Polyporus betulinus* (page 14)

Grows on the bark of birch trees projecting like thick plates another name for them is Razor strop because being so hard and 'leathery' was used for such. They are long lived and eventually kill the birch. The tube pores under the fungi contain many little beetles on the older specimens.

Cramp balls or king Alfreds cakes *Daldinia concentrica*

Black roundish knobs on the bark of Ash trees mainly,

and of Beech. When cut open annual concentric rings are seen.
Kept in the pocket are said to cure cramp and rheumatism.
The fungi is dry and hard but is said to contain its own storage of water in dry weather

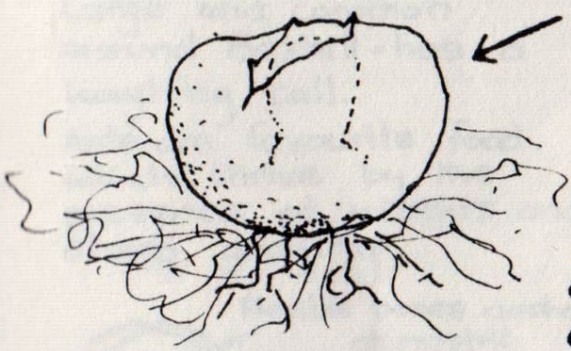
Candle snuff or Stags horn. *Xylaria hypoxylon*

5 - 7cms tall.

grows on dead wood - tree stumps etc.

Stinkhorn *Phallus impudicus* (page 14)

Usually smelt before seeing. The 'putrid' odour given off after emerging from the young stage shown below, attracts flies of all descriptions to feed on the slimy brown cap. The flies carry off the spores unwittingly.
This fungi grows in rich woodland soil.



1st stage of the stinkhorn which is about 3" in dia (7.5cms) and comprises of clear or tinted olive green jelly in which the cap can be clearly seen. This ball of jelly then splits and the brown cap and white stem erupt and elongates within hours. (see illustration on page 14.)

Puffball *Lycoperdon* see page 14

Grows in groups on timber on the woodland floor.
When advanced the papery brown skin splits and awaits vibration or a knock to puff out the spores from the opening.
A rain drop does this!

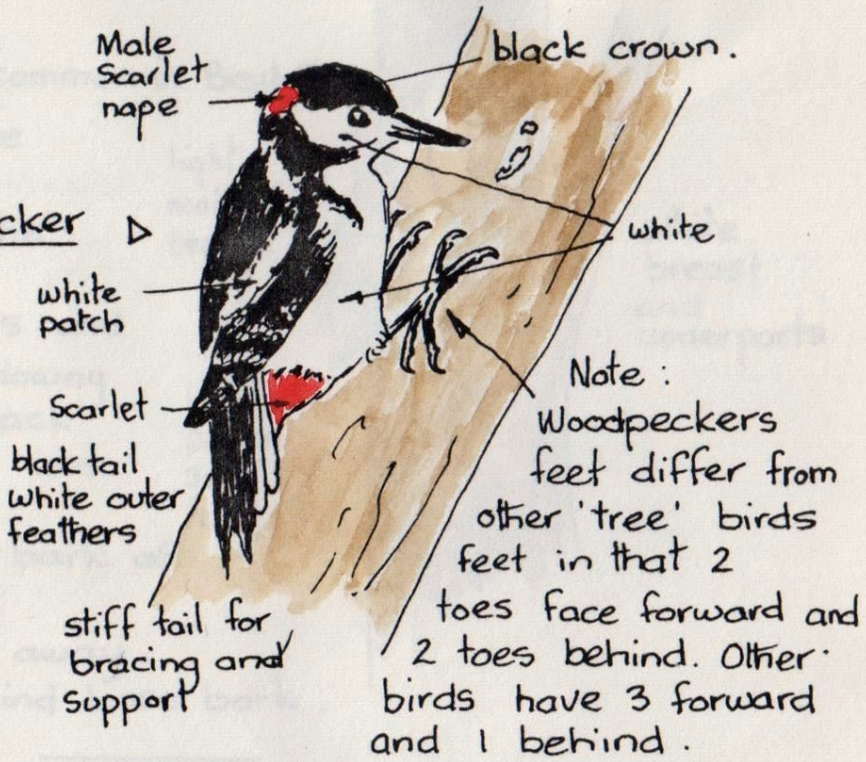
WOODLAND BIRDS

Great spotted Woodpecker ▷

Much larger than the Lesser spotted which is sparrow size - similar colouring but lacks the white patch above wing and male Lesser has scarlet crown - female white.

Occasionly heard drumming in the woods around Bexhill.

House sparrow scale



Note: Woodpeckers feet differ from other 'tree' birds feet in that 2 toes face forward and 2 toes behind. Other birds have 3 forward and 1 behind.

Eats wood boring insects (bark beetles)

Drumming :-

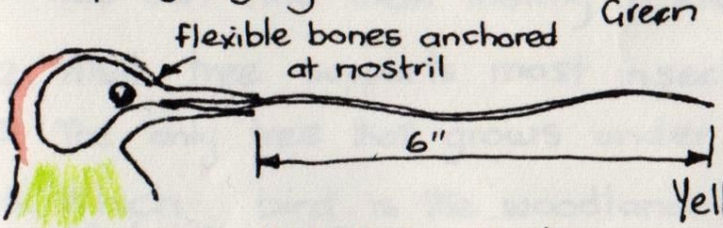
Great – 8 to 10 blows per sec.
Lesser – 14 to 15 blows " "

Robust skull structure and muscles in the upper jaw cushion the shock and vibration of blows. Drumming on dead branches for a mate and territory.

The Great spotted woodpecker is the most frequent of the two species.

Green Woodpecker. (Yaffle)

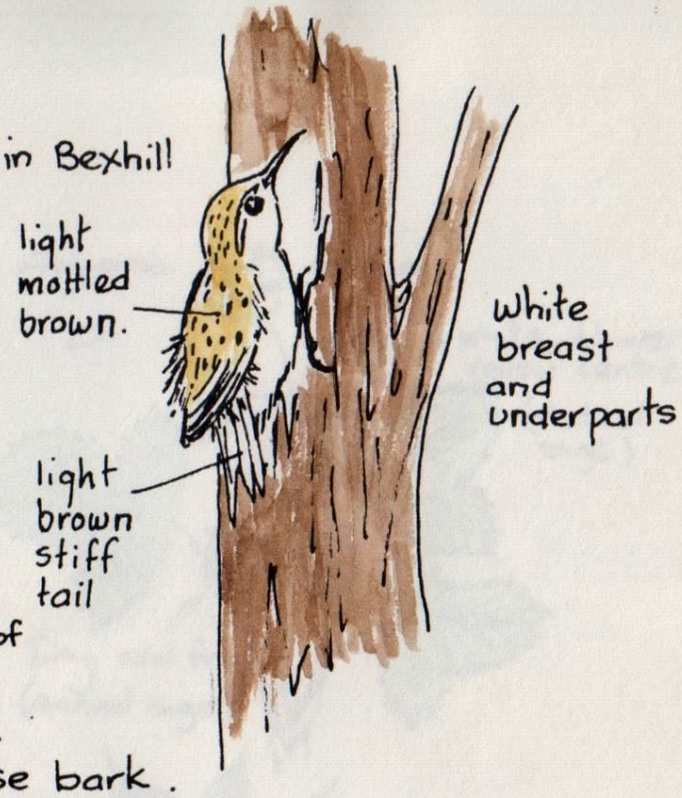
Large and common around Bexhill - has a laughing call.
Ants are favourite food. which thrive by the presence of rabbits and sheep grazing.



Long tongue linked to elastic tissue and flexible bones which extend well into head.
Tongue is sticky and collects insects in crevices and holes.

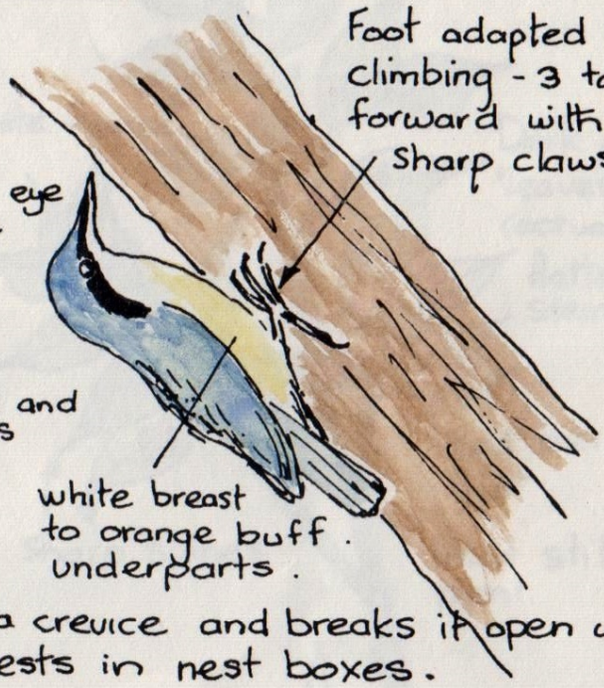
Treecreeper Quite common in Bexhill

Little mouselike tree birds 'running' up tree trunks probing the bark for insects.
Suffers in cold winters and is able to fluff out downy feathers on lower back to reduce body heat loss.
Can hollow out by excavation the soft bark of Wellingtonia trees.
Rarely flies very far away.
Builds tiny nest behind loose bark.



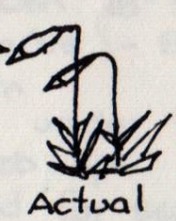
Nuthatch common in Bexhill

A sparrow sized bird, adapted for movement on trunks and branches.
Can come down tree trunks head first or run upside down under a branch. at any angle.
Nests in holes in trees and will reduce the entrance with mud lining to keep out larger birds.



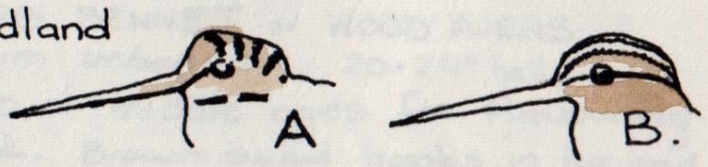
Stores nuts - jams a nut in a crevice and breaks it open with its strong bill. Quite often nests in nest boxes.

QUESTIONS

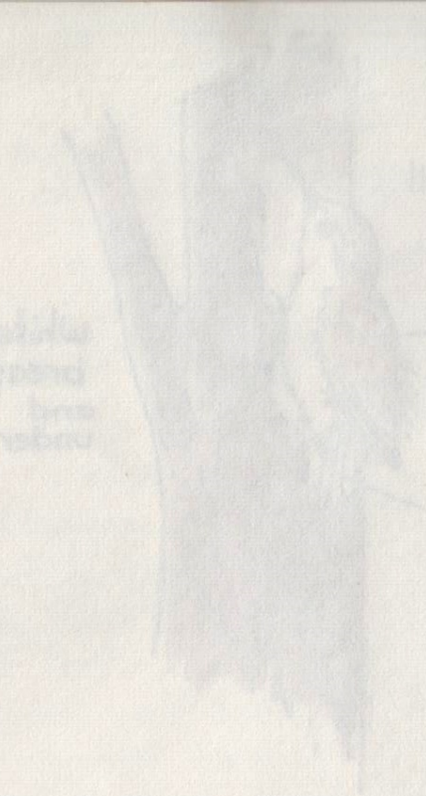


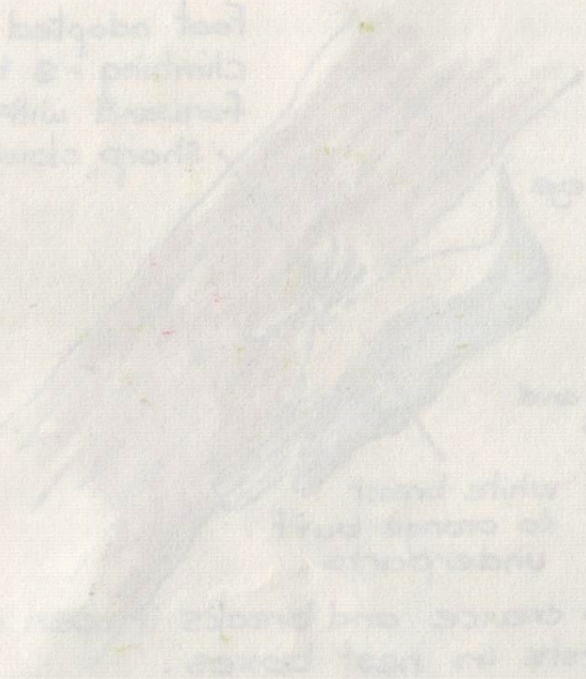
Actual size.

1. What do think these plants are called? ...
   You can find them mainly in Woods .....
2. What tree supports most insect life .....
3. The only tree that grows under the shade of a beech .....
4. Which bird is the woodland bird A or B.
   (If I give the names of them you would know) .....



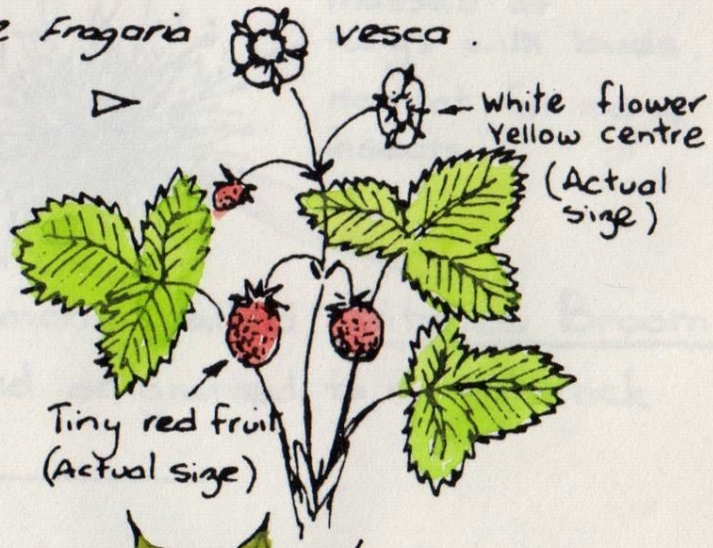
5. Which butterfly is the odd one out: ie not seen in Woodland
   White Admiral - Gatekeeper - Purple hairstreak - Common Blue - Brimstone.

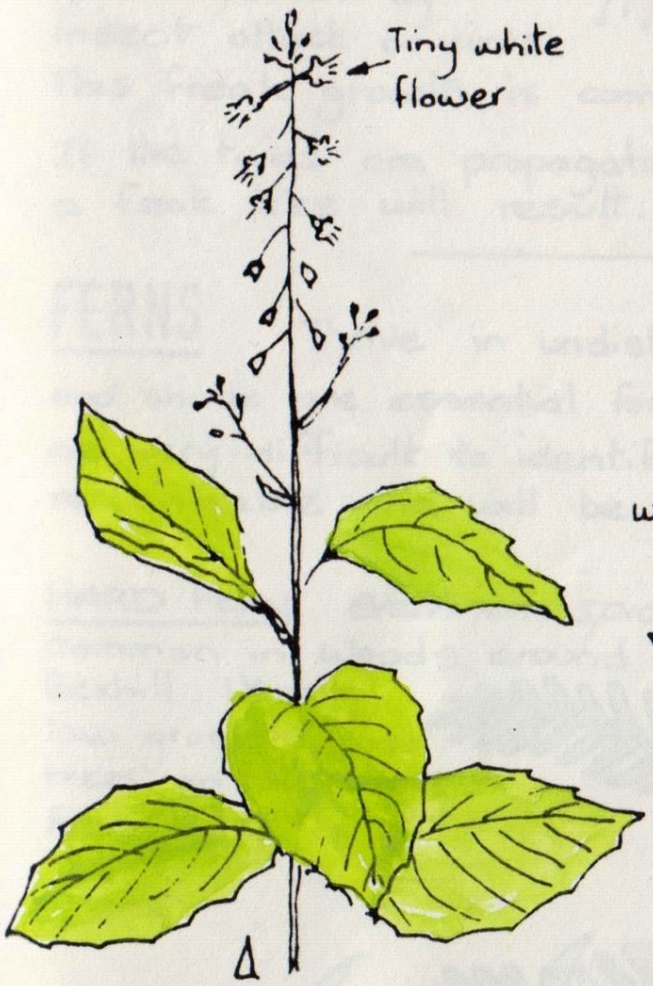




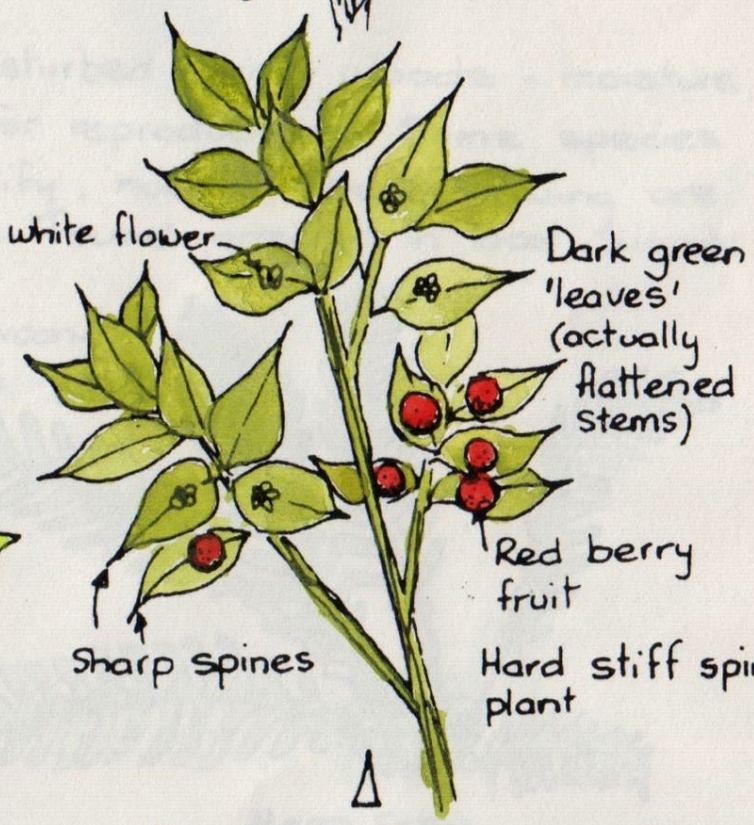
WOODLAND PLANTS

WILD STRAWBERRY *Rosaceae Fragoria vesca*.
Very common low growing flowers in April/May

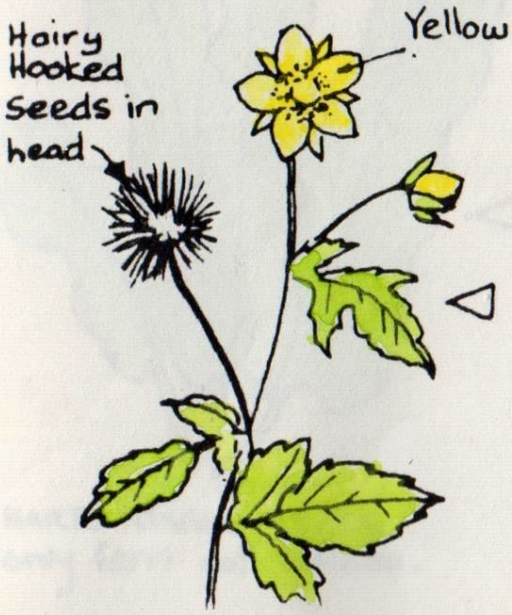




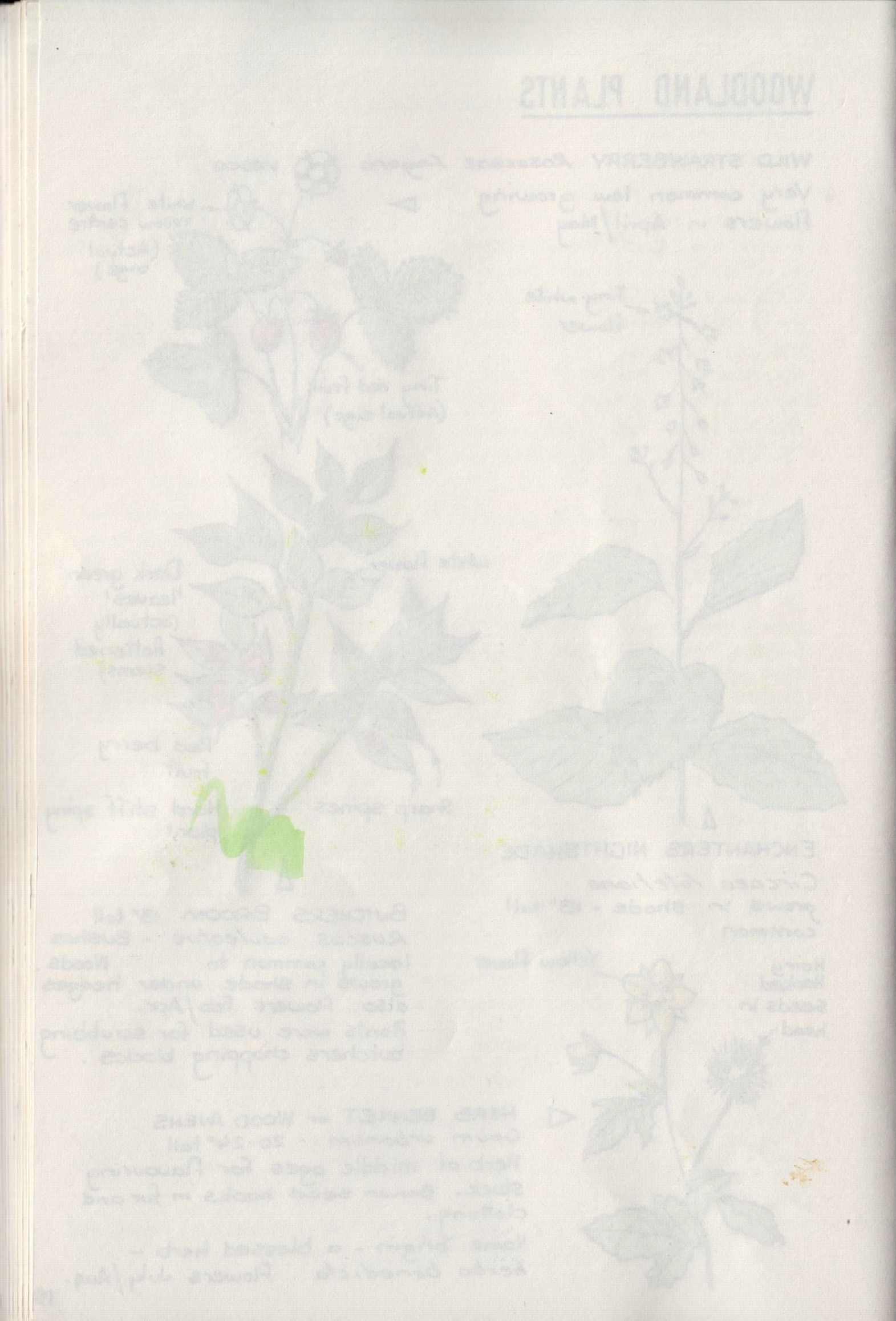
ENCHANTERS NIGHTSHADE
Circaea lutetiana
grows in shade - 18" tall
common.



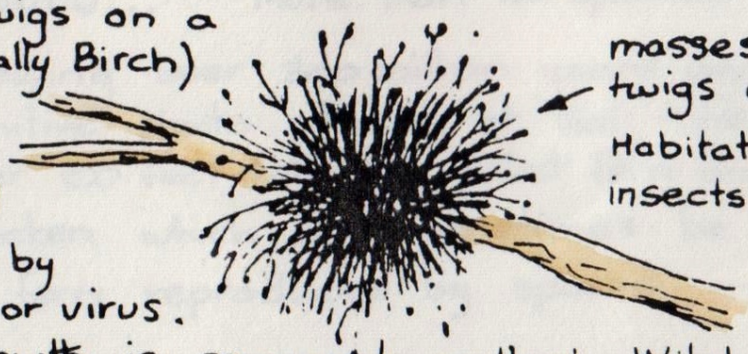
BUTCHERS BROOM 18" tall.
Ruscus aculeatus - Bushes
locally common to Woods.
grows in shade under hedges
also. Flowers Feb/Apr.
Plants were used for scrubbing butchers chopping blocks.



HERB BENNET or WOOD AVENS.
Geum urbanum. 20-24" tall.
Herb of middle ages for flavouring stock. Brown seed hooks in fur and clothing.
Name origin - a blessed herb - *herba benedicta*. Flowers July/Aug.



A mass of twigs on a branch (Especially Birch) that is seen Sometimes, is an abnormal growth caused by insect attack or virus.



masses of twigs with buds. Habitat for many insects.

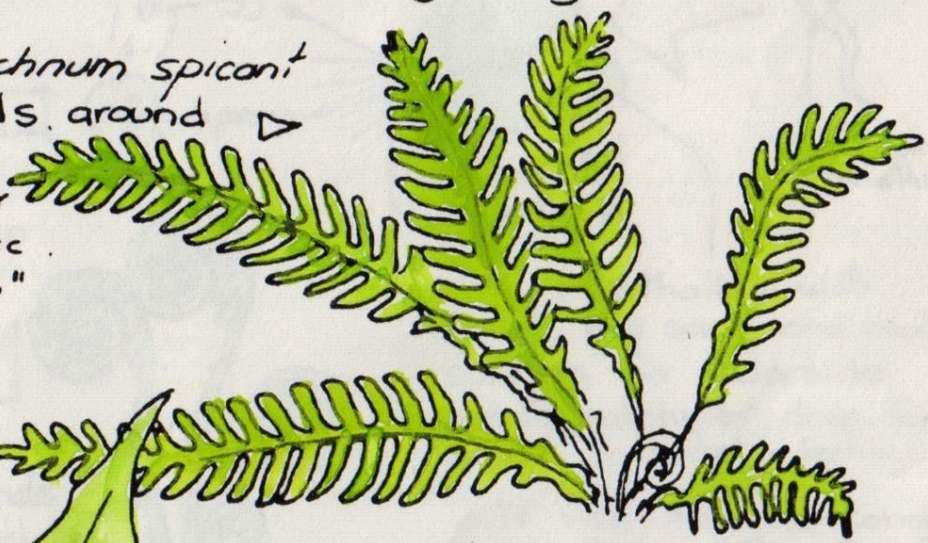
This freak growth is commonly called Witches Broom.

If the twigs are propagated or grafted to a rootstock a freak tree will result.

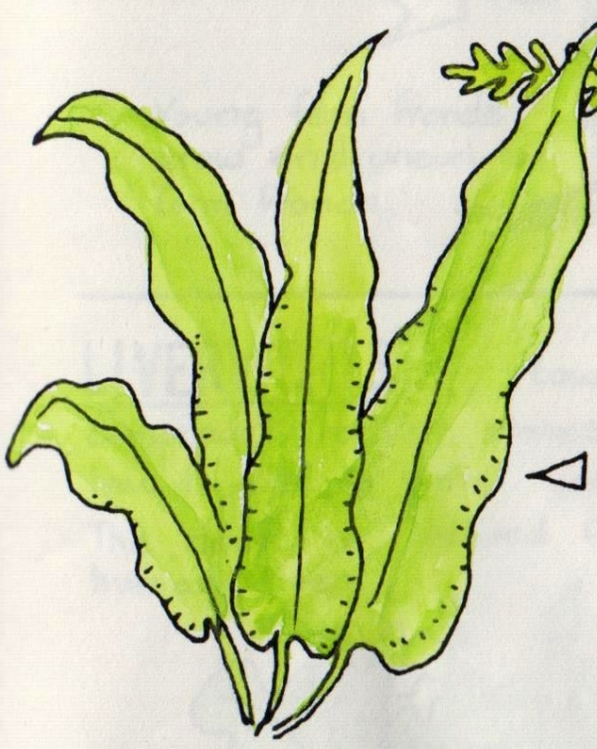
FERNS

Thrive in undisturbed damp woods - moisture and shade are essential for reproduction. Some species are very difficult to identify, however the following are recognisable and will be found growing in local woods.

HARD FERN *Blechnum spicant*
common in woods around Bexhill. Usually low growing under trees or banks etc.
Fronds 4" to 15"

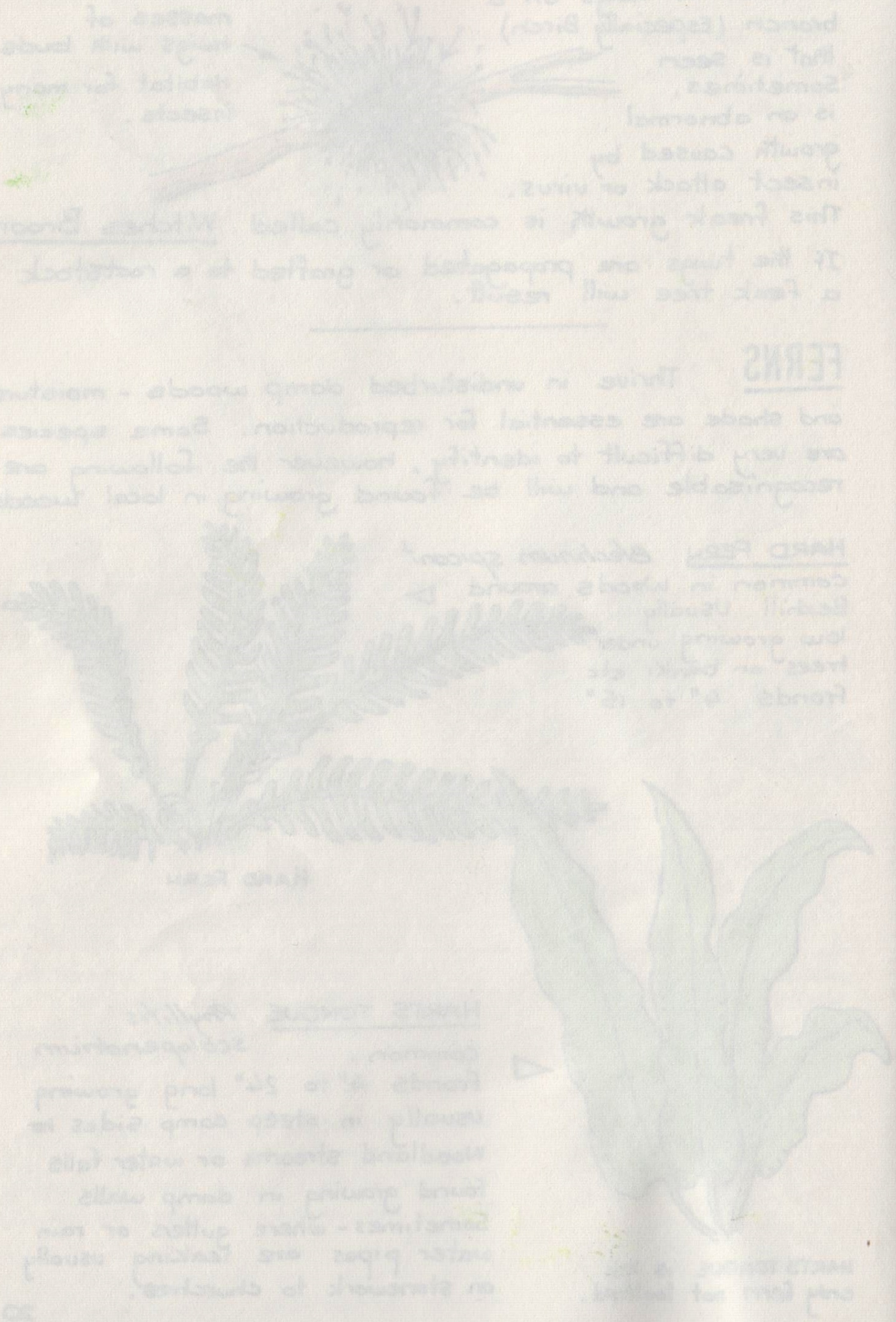


HARD FERN



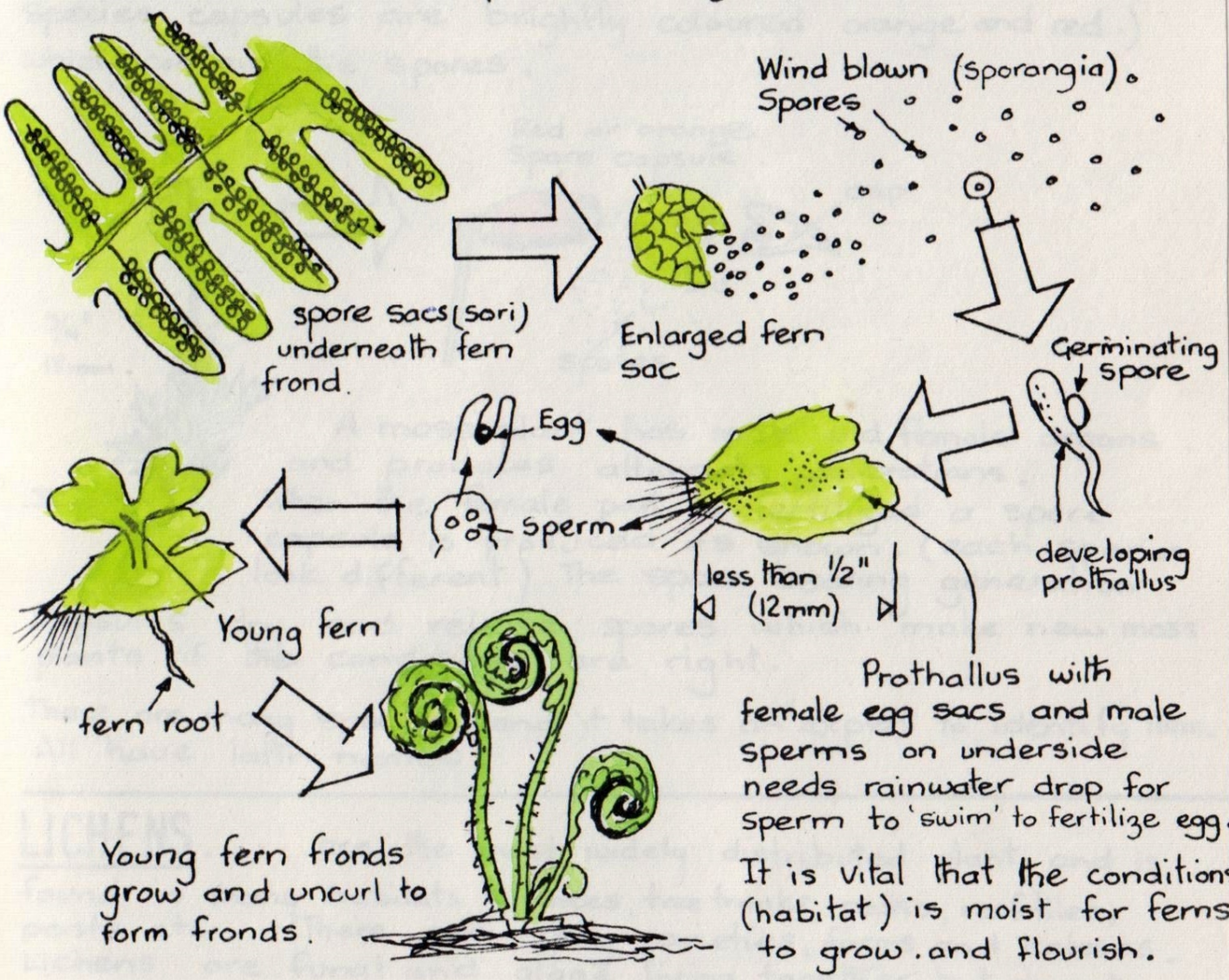
HARTS TONGUE is the only fern not toothed.

HARTS TONGUE *Phyllitis scolopendrium*
common.
Fronds 4" to 24" long growing usually in steep damp sides to Woodland streams or water falls.
found growing in damp walls Sometimes - where gutters or rain water pipes are leaking usually on stonework to churches.



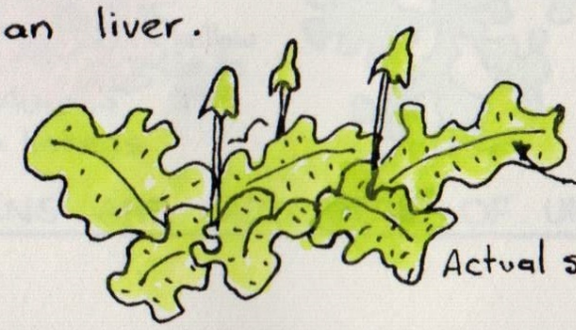
FERNS continued... More than 50 species in Britain

Ferns were growing over 300 million years ago and are one of the primitive plants although at that time some fern trees stood over 100 feet tall. Our tallest fern and the most prolific is Bracken which can sometimes be just over 5 feet tall. The fern reproduces by spores →



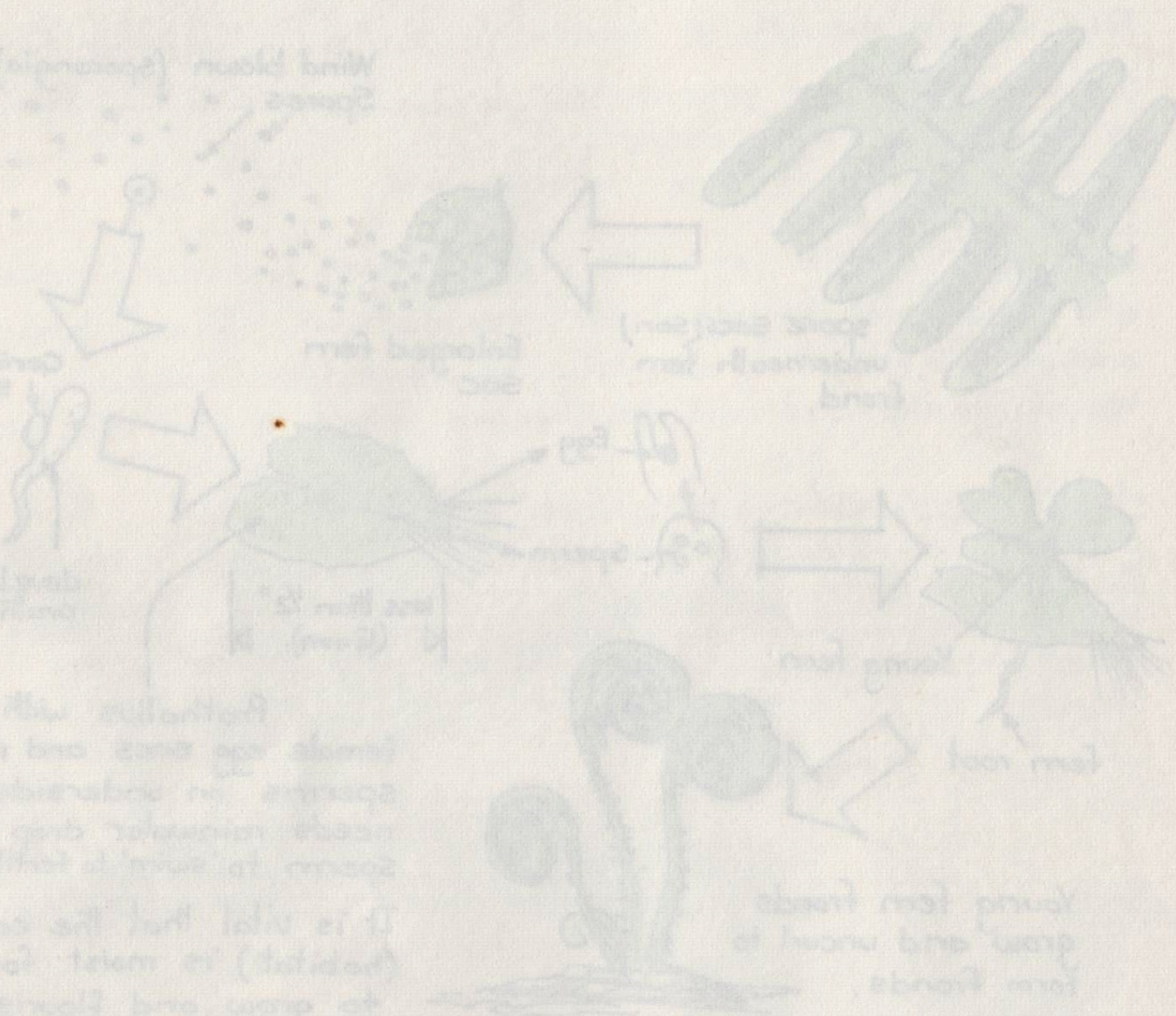
LIVERWORTS ... Low flat green 'fleshy' plants growing on damp earth, rocks, stones - sides of streams, waterfalls and tree trunks in moist conditions.

The name is derived from the vague similarity to the shape of human liver.



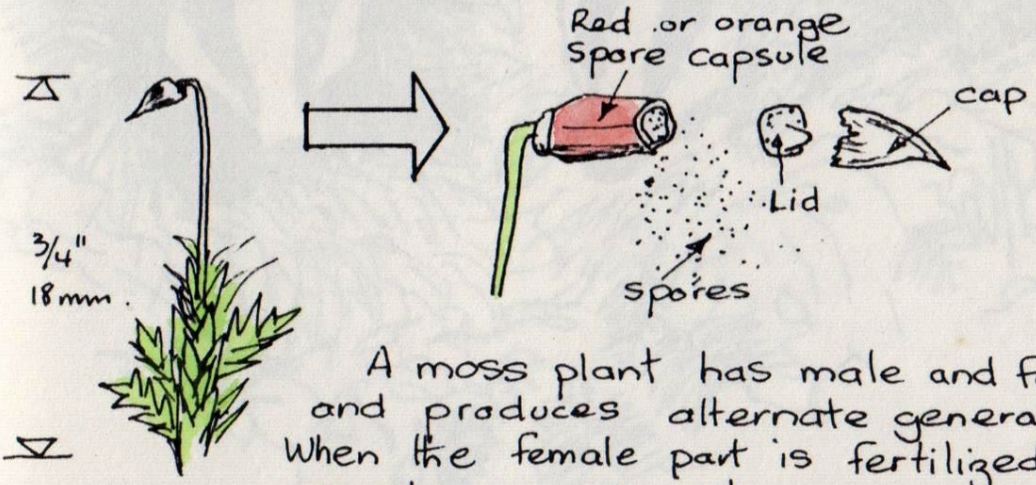
No English names. Generally spore reproduction - females on capped stalks - males on thalli.

Thalli is the name for 'fleshy' leaves



MOSSES... have no true leaves, stems or roots.

Moss 'leaves' are thin and flat and are arranged spirrally around weak flimsy stems. These stems do not conduct food as in normal plants. Mosses absorb water over their entire surface. Like liverworts they need moist conditions to survive and wintertime is the ideal period and in early spring stalked capsules are produced (in some woodland species capsules are brightly coloured orange and red.) which contain the spores.

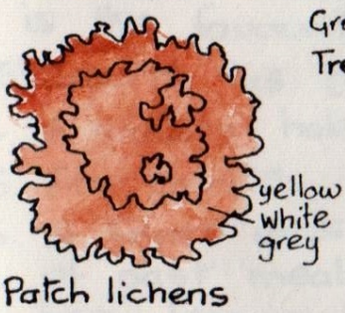


A moss plant has male and female organs. and produces alternate generations. When the female part is fertilized a spore capsule is produced as shown. (each species look different) The spore bearing generation Capsules dry and release spores which make new moss plants if the conditions are right.

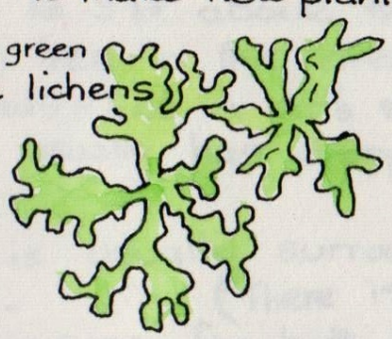
There are many species and it takes an expert to identify them. All have latin names.

LICHENS... are the most widely distributed plant and is found in many habitats - fences, tree trunks, paths, roof tiles, posts etc. There are many varieties, forms and colours. Lichens are fungi and algae living together but do not require damp conditions. Experts are needed for identification as all also have latin names.

Fungal pieces break off to make new plants and spores is a second reproduction method.



Patch lichens



ground cup lichens usually grey green.

LICHENS ARE INDICATORS OF UNPOLLUTED AIR

BADGERS

We are very fortunate to have a large population of these animals in Suseex and their setts are to be found in the surrounding woodland.
Identification of a badgers home as against a rabbits hole or foxes den:- see illustration over.

1. Two or three shallow pits in the soil behind the entrances are the badgers latrines.
2. Small heaps of used bedding bracken, leaves, grass may be found close by.
3 Examine the trunks of nearby trees for scratches - claw marks 2ft to 3ft above the ground (Elder is the favourite tree in this area) where the badger sharpens his claws - like a cat's scratching post.
4. A rabbits hole usually has droppings in the vicinity.
5. Foot prints.
6. A Foxes 'earth' is usually surrounded in old bones of past meals. (There is no latrines) It has been known however for both foxes and badgers to live together using different entrances and tunnels.

Setts usually have a cover of undergrowth and the mounds of excavated soil are usually a giveaway.

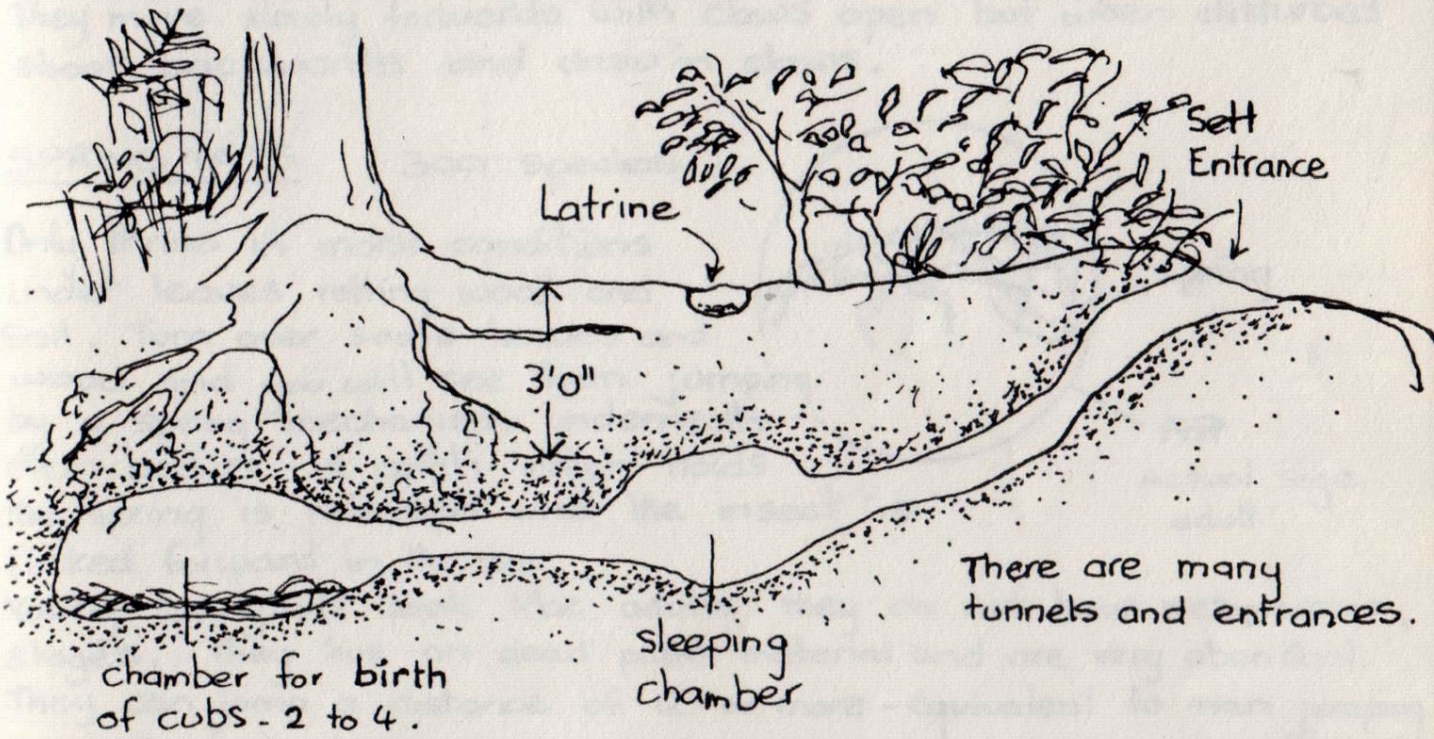
Diet. Earthworms, snails, grubs in bee and wasps nests. fruit especially blackberry, mice, dead birds, beetles

Average lifespan - 3 years but can live to 10.

Badger. 5 toes

Dog. 4 toes.

Fox (Tracks in straight line)



Badgers are nocturnal and not usually seen before midnight!

QUESTIONS

1. A ball of leaves and twigs in the fork of an oaktree? SQUIRREL'S DREY

2. 

The foot of a Woodland bird? WOODPECKER

3. 

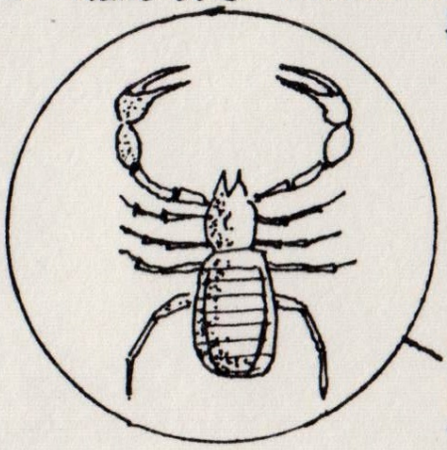
Insect? makes white 'squiggles' in leaves. LEAF MINER MOTH

4. Dutch Elm disease caused by a bark Beetle .. true or false? ....TRUE

5. A Shield bug feeds on tree sap? ...YES..

Creatures of leaf litter

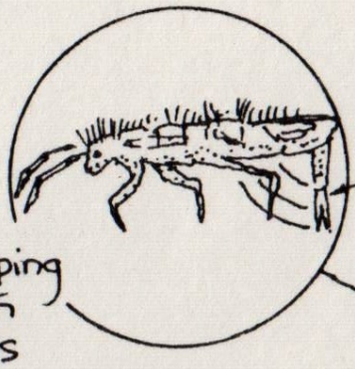
– Rake over leaves and see the following:-



FALSE SCORPIONS

These are very tiny creatures of the spider family (note the 8 legs)
Lives on mites and other tiny creatures of the soil and decaying leaf litter on the woodland floor.
The pink coloured pincer claws have a poisonous gland to paralyse prey.
There are 26 species. Common.
They move slowly forwards with claws open but when disturbed shoot backwards and draw in claws.

SPRING TAILS 300 species



Only thrive in moist conditions under leaves, rotting wood and soil. Turn over some leaves and wood and you will see them jumping by a spring mechanism underneath their bodies - A catch which holds the spring is released and the insect is flicked forward in the air.
Young springtails look like adults they do not have metamorphic stages. They live on dead plant material and are very abundant.
They can jump a distance of 12" or more - equivalent to man jumping 250 - 300 yards.
They are primitive insects and are most important in the decomposition of organic material.

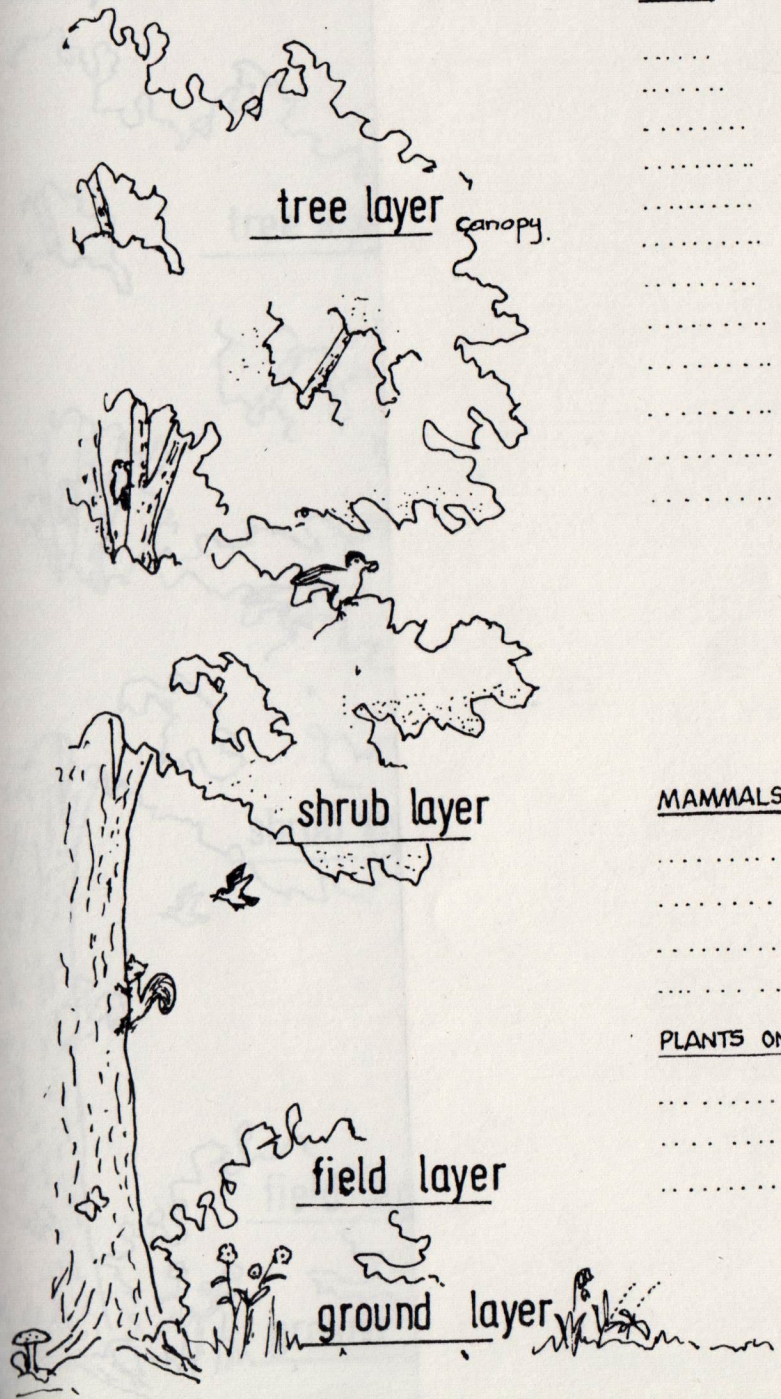
<u>Centipedes</u> and <u>millipedes</u> are also found in leaf litter including <u>woodlice</u> and <u>long legged harvestman</u> which is related to spiders.

BRISTLE TAILS 9 species

The common silver fish sometimes found at home is a bristletail.
Like springtails they are wingless insects and the young look like the adult.

Runs quite fast when disturbed.
from 1/4" to 1/2" long.

Can you name some species :-



BIRDS

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MAMMALS

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PLANTS ON TRUNK

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INSECTS

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FLOWERS

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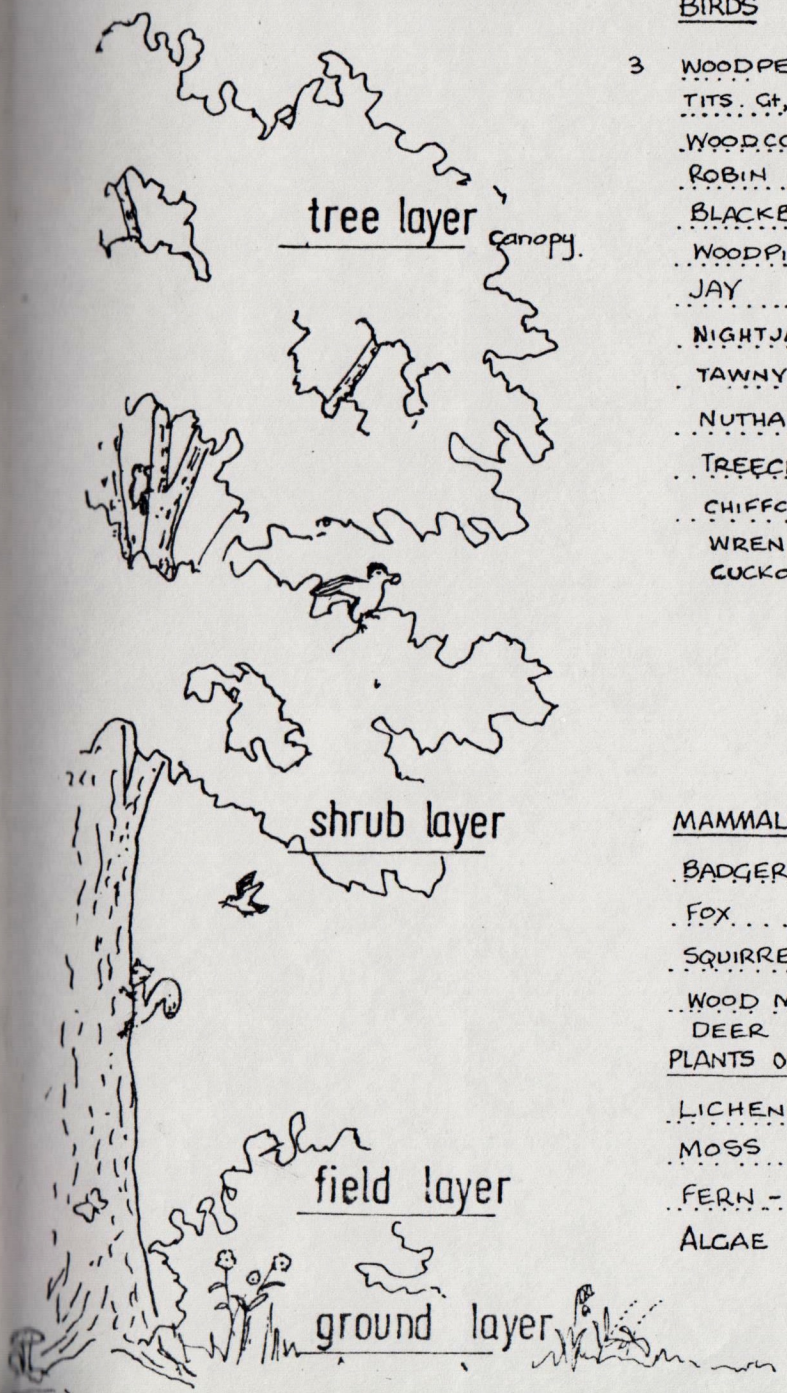
Can you name some species :-



BIRDS

3 WOODPECKERS. L & G Spotted Green
TITS. Gt, Blue, Longtailed. Willow.
WOODCOCK
ROBIN
BLACKBIRD
WOODPIGEON
JAY
NIGHTJAR
TAWNY OWL.
NUTHATCH
TREECREEPER
CHIFFCHAFF
WREN.
CUCKOO

INSECTS

MOTHS. } and Caterpillars
BUTTERFLIES }
SHIELD BUGS.
BEETLES
ANTS
WASPS
Weevils.
SPRINGTAILS.
CRICKETS.
Various FLY species
APHIDS.
GALL WASPS.

MAMMALS

BADGER.
FOX
SQUIRREL
WOOD MOUSE
DEER

PLANTS ON TRUNK

LICHENS
MOSS
FERN - Polypody.
ALGAE

FLOWERS

BLUEBELL
PRIMROSE
WOOD SAGE
FOXGLOVE
RAMSON.
WOOD ANEMONE
WOOD SORREL
Dog VIOLET.

TREES

OAK
HOLLY
BEECH
ASH
HAZEL
ROWAN
HORNBEAM
YEW

FUNGI

BRACKET Polypores
PUFF BALL
FLY AGARIC
PARASOL MUSHROOM.

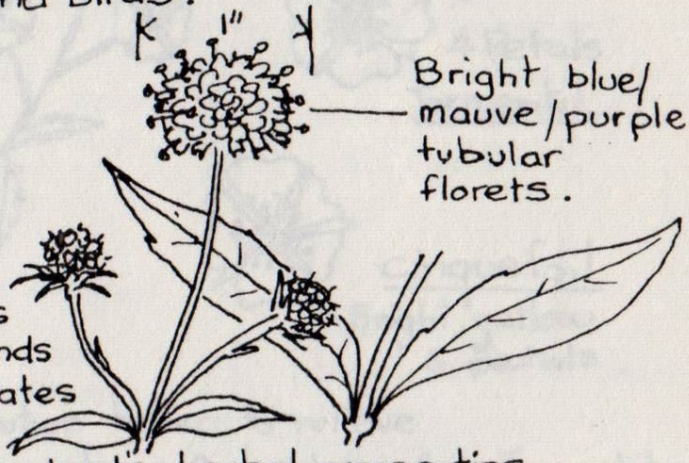
ECOLOGY OF A WOODLAND HABITAT

GRASSLAND HABITAT


Rye grass

Very few untouched meadows and fields remain around Bexhill most have either been treated with fertilizers or Herbicides or simply left unmanaged which loses its diversity of flora and animals. The stronger grasses and vegetation shade out the smaller plants and small trees start to grow to turn it into scrubland.
The important meadows which contain the most diverse plant life are those which have never been ploughed and have been cut annually or grazed in late summer. and have not been treated in any way.
Rabbits are ecologically important in keeping the grass short so allowing the low growing flowers to thrive and the growth of vigourous grasses kept in check.
Such meadows contain the original plants and the cut grass is used for haymaking and winter fodder for cattle.
In these days of intensive agriculture, a heavier yield of hay is produced by ploughing and sowing selected grass seed such as Rye grass which of course is bad news for our indigenous flowers of the meadow. Many of the old meadow flowers grow on the verges of country lanes, generally these are the only examples left.
Another hazard is that the field may be cut too early so that the seed is not set.
If the field flora is affected by chemical or soil changes ie fertilizers, ploughing etc, then a proportional decline in insects* must result which may affect the populations of mammals (insectivores) reptiles and birds!

Some meadow flowers



DEVIL'S BIT SCABIOUS
Succisa pratensis

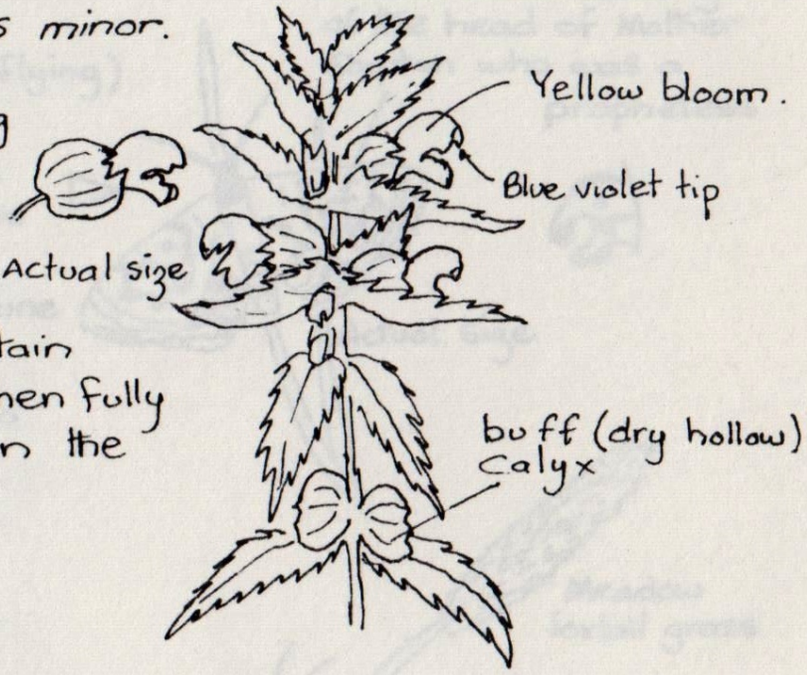
A tall flower - 1 to 2 feet.
A good nectar flower for bees and butterflies. The rootstock ends abruptly and a folk lore tale relates how the root was bitten off by the devil who was envious of the plants herbal properties.

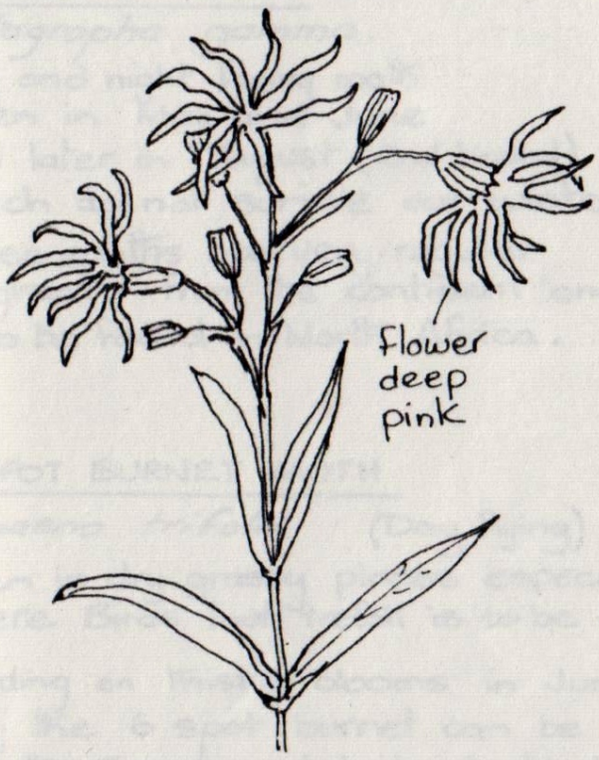
* Bees and butterflies and other important pollinators.

Meadow flowers continued :-

YELLOW RATTLE *Rhinanthus minor.*

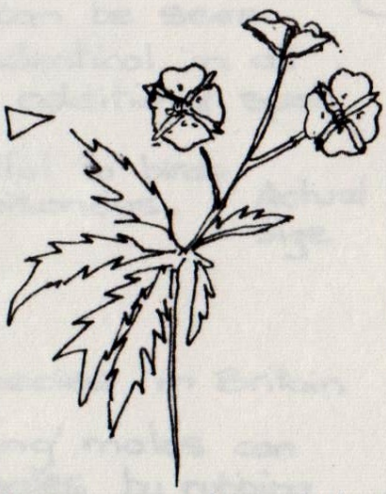
5" to 12" tall
Semi parasitic by drawing nourishment from the roots of grasses - can be found in old meadows and generally dry ground.
The large pod like calyx contain flat brown seeds which when fully ripe 'rattle' quite audibly in the summer breezes.
Also called hay rattle





RAGGED ROBIN
Lychnis flos cuculi

Grows 12" to 16" in damp meadow marshy places.
thin stems.
Flowers May and June.
In folklore the name 'Robin' is linked with goblins. so it discouraged picking



TORMENTIL (*Potentilla erecta*)
sprawling.
Common in grassy places around Bexhill
Similar to Cinquefoil but has 4 petals compared with the Cinquefoil which has 5 petals.

Tormentil

cinquefoil
Bright yellow
5 petals.

The roots were boiled and the solution taken to relieve pains or 'torment' of the stomach. An extract from Tormentil was used by fishermen in the Hebrides to preserve their nets.

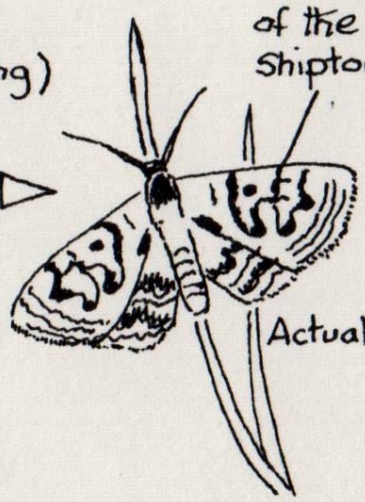
Moths of the meadow...

MOTHER SHIPTON MOTH (Day flying)

Callistege mi

If you find a field of tall grass with some flowers look for this delightful moth which can only be seen between May and June

If you do not see it during these months you will have to wait until the following year.



Actual size

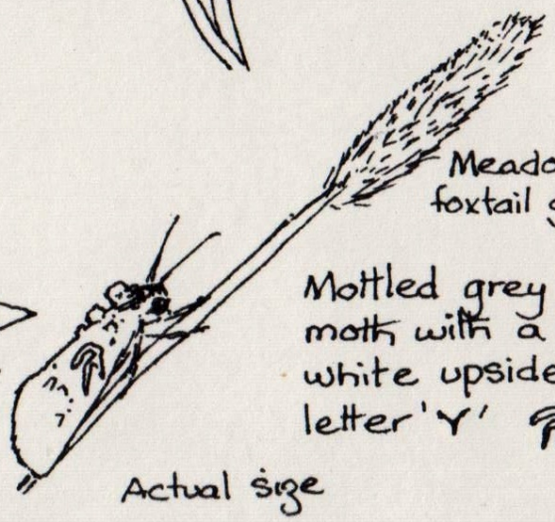
shaded brown markings of the head of Mother Shipton who was a prophetess

SILVER Y MOTH

Autographa gamma.

Day and night flying moth seen in May and June and later in August (2nd brood) which do not survive our winters.

These moths are very regular migrants from the continent and is to be found in North Africa.



Meadow foxtail grass

Mottled grey brown moth with a vivid white upside down letter 'Y'

Actual size

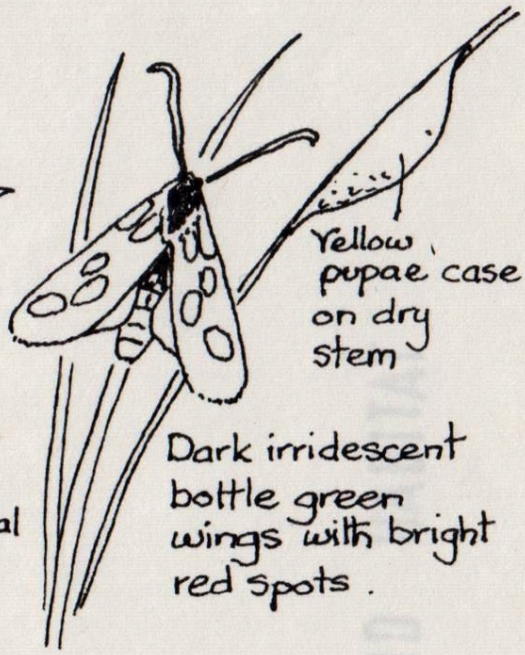
5 SPOT BURNET MOTH

Zygaena trifolii (Day flying)

Seen in dry grassy places especially where Birds foot trefoil is to be found.

Feeding on thistle blooms in June and July the 6 spot burnet can be seen with the 5 spot and look identical in all respects except for the additional spot.

These moths are distasteful to birds and their body fluids poisonous.



Yellow pupae case on dry stem

Dark irridescent bottle green wings with bright red spots.

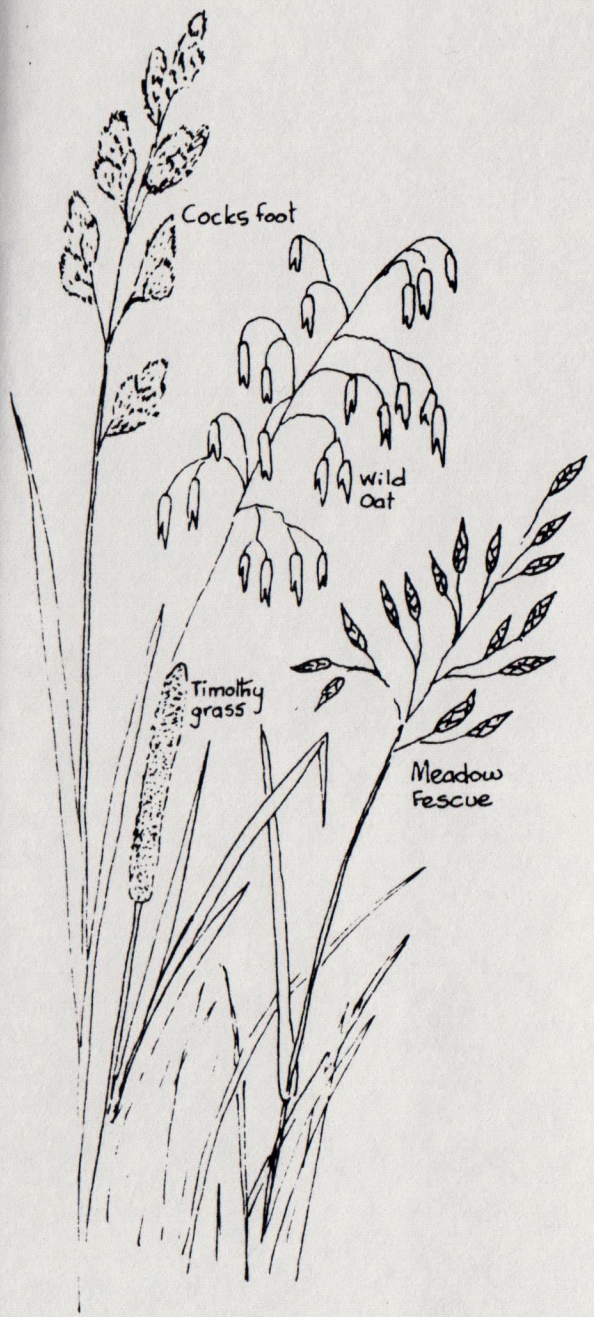
Actual size

Grasshoppers

11 species in Britain

On hot sunny days 'singing' males can be heard attracting females by rubbing hind legs on the wings producing this 'sandpapering' sound. Grasshoppers hatch from eggs (which are under the grass in the soil) as miniature adults. They grow casting their skin every so often.

wings help to gain distance when leaping



FLORA

Common spotted orchid
birds foot trefoil
Yarrow
Dandelion
Clovers.
Field buttercup
Black knapweed
Ladies smock
Ribwort plantain
Tufted vetch
Ox eye daisy
Lesser hogweed
Ragwort
and those on pages 27-28
Ox tongue.
Catsear.

INSECTS.

Ants.
Butterflies
- Common blue
- Small copper
- Meadow brown
- Gatekeeper
- Small tortoiseshell
- Peacock
- Small/Large skippers.

Moths page 29
Grasshoppers
Beetles
- Click
- Ladybird
- Soldier
- Dung
- Carrion

Froghoppers.
Craneflies
Flies
Bees.

MAMMALS

Rabbit
field mouse
field vole
Weasel
Shrews
Harvest Mouse

REPTILES

Common Lizard
Grass snake

BIRDS.

Meadow pipit
Linnet
Goldfinch
Stonechat
Kestrel
White throat
Barn owl
Little owl

Skylark.
Song Thrush
Mistle Thrush
Field fare
Starling

GASTROPODS

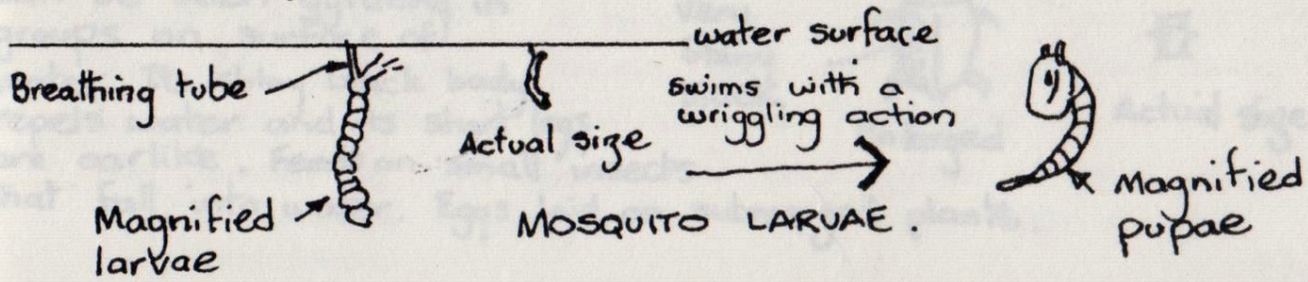
Grove snail
Banded snail

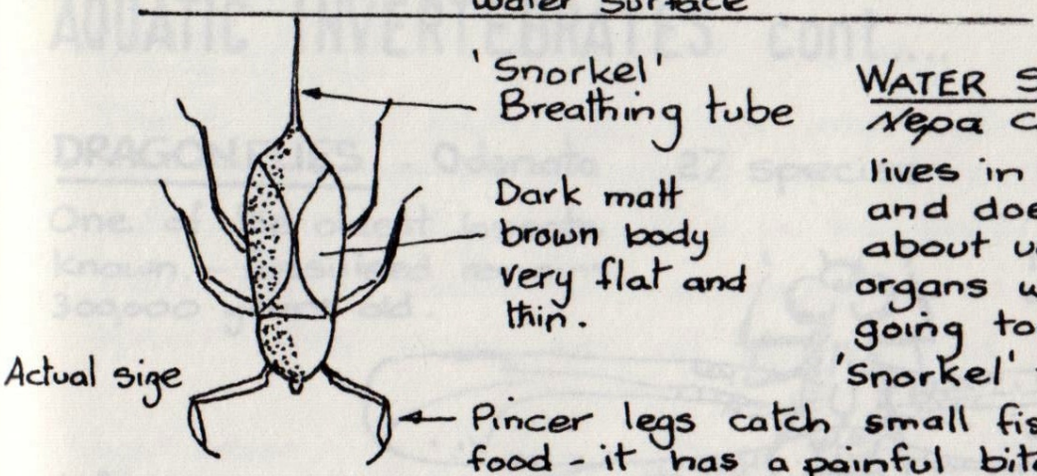
SPIDERS.

GRASSLAND HABITAT

STREAMS AND PONDS

Have you noticed the difference between a pond situated in a open field and a pond shaded by trees in a wood? The pond or lake in the open sunlit aspect teems with life, both plant and creatures as compared with the lifeless water in a wood which is shaded by trees.
Why is this - Plants exist and need sunlight in order to thrive and give off oxygen which is most necessary for creatures and most animal life, whereas the pond in woodland generally does not receive this life giving element. The leaves fall from the trees in the autumn and gradually build up and decay on the bed of the pond. The decay makes smelly gases and the water loses its oxygen without which most aquatic life soon die.
So remember if you create a pond form it out in the sunlight for it to be healthy. All creatures living in water must have air. If the air is expelled or not present as in boiled water they will drown.
The balance is delicate_if the water is contaminated by fertilisers from surrounding land the vegetation especially algae will increase tremendously, choking the water and creating an imbalance, the algae dies and its decay may exhaust the oxygen in the water.
Moving water as in streams usually maintain their 'freshness' and oxygen. Water may dry up in the summer but most creatures have developed from the larval stage into winged adults and fly off, others produce drought resistant eggs which hatch at the return of water.
Water has a surface film which is used by creatures such as pond skaters and whirligig beetles_the film is created by tension between water molecules and is pierced by breathing tubes of mosquito larvae and the water scorpion.



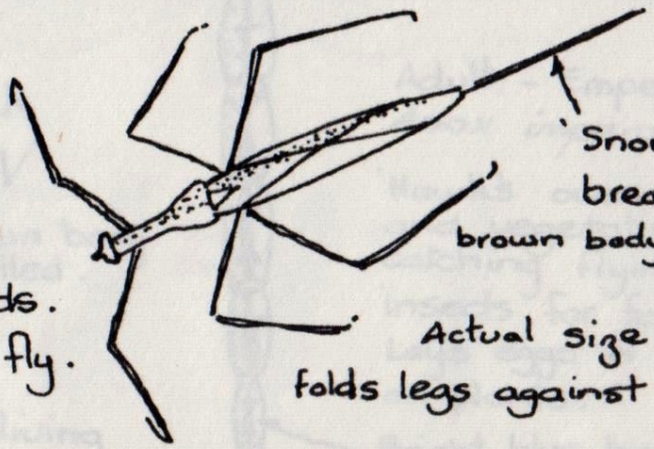


WATER SCORPION
Nepa cinerea.

lives in weedy ponds and does not move about very much. Special organs warn it when it is going too deep for its 'Snorkel' to work.

Has wings concealed under wing cases but cannot fly. Lays eggs in plant stems.

WATER STICK INSECT
Ranatra linearis



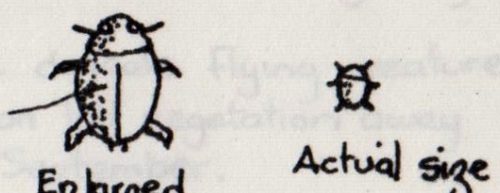
Related to water scorpion with similar habits.
Good camouflage in weeds.
Also has wings but cannot fly.
Only found in Southern Britain. Found in shallow weeded ponds around Bexhill as water scorpion, and also is a carnivore.

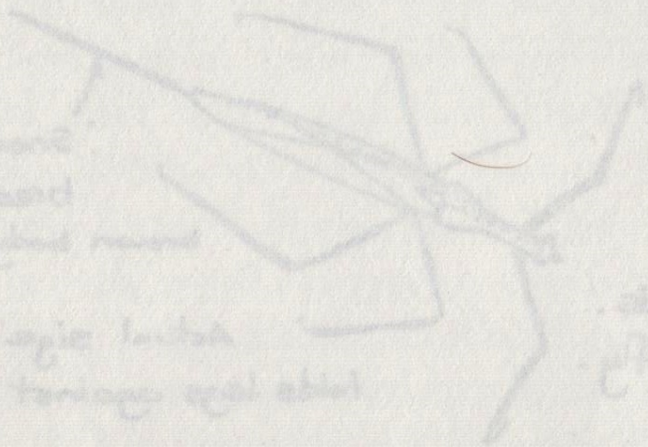
WATER BOATMAN 4 Species

Grey brown, yellow boatman are carnivorous and swim upside down using powerful oar like strokes of its legs.
Can pierce a tadpole or tiny fish with its mouth parts and injects a poison into its victim. It will bite fingers!.
When diving it carries an air bubble held by bristles on its body. giving a silvery appearance.
Boatman fly from pond to pond usually on warm evenings.
Very common in still water - can be found in cattle drinking troughs.

WHIRLIGIG BEETLE. *Gyrinus natator*

Can be seen gyrating in groups on surface of water. Its shiny black body repels water and its short legs are oarlike. Feeds on small insects that fall into water. Eggs laid on submerged plants.





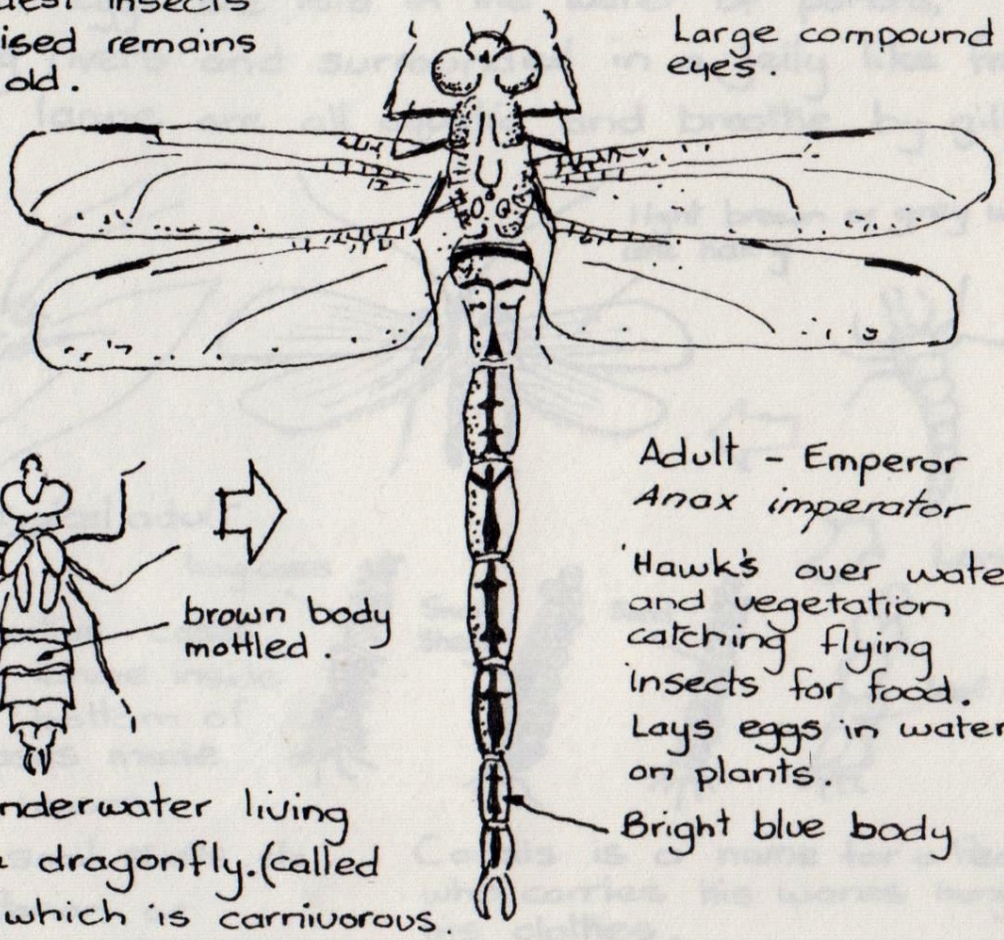
AQUATIC INVERTEBRATES cont....

DRAGONFLIES - Odonata 27 species

One of the oldest insects known. - fossilised remains 300,000 years old.

Large compound eyes.

Life span of adult about 4 weeks



Adult - Emperor *Anax imperator*

'Hawk's over water and vegetation catching flying insects for food. Lays eggs in water on plants.

Bright blue body

Actual size

brown body mottled.

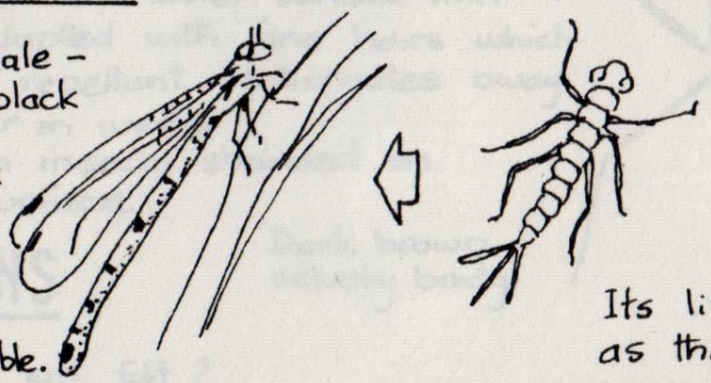
A typical underwater living larvae of a dragonfly. (called a 'Nymph') which is carnivorous.

There is no pupae stage, when larvae is fully grown after 2 or 3 years it climbs up a stem out of the water and the adult breaks out of the larval skin. (some species take 5 years to mature)

DAMSELFLIES 17 Species (3 common in Bexhill)

Body of Male - Blue with black markings (There is a red bodied species common to Bexhill)

Females variable.

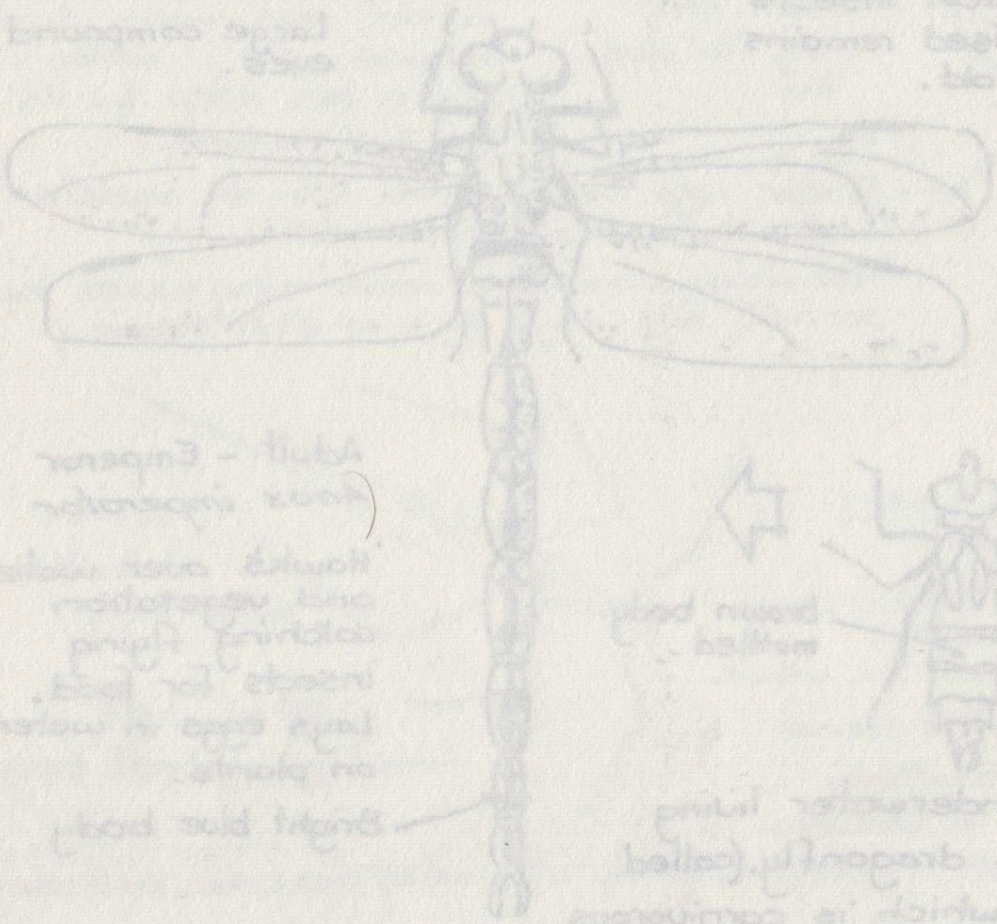


Larvae (actual size) lives under water (also called a nymph) and is carnivorous.

Its life history is basically as that of the dragonfly

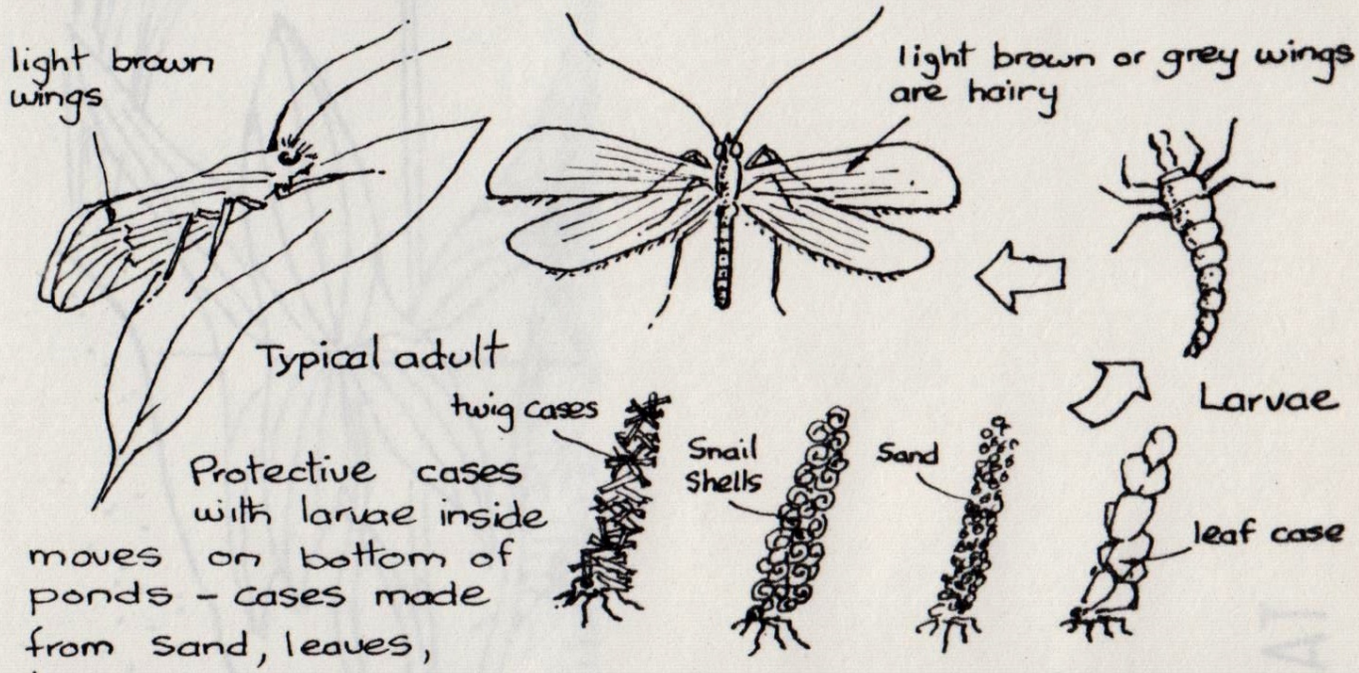
Adult (Actual size) A much more delicate flying creature than the dragonfly. Found also on tall vegetation away from water. Seen from May to September.

The damsel fly has wings over back when at rest which is in contrast to dragonflies which rests with wings outstretched.



CADDIS FLIES Nearly 200 Species

These brown moth like flies are mainly nocturnal and they may be attracted to artificial light at night with moths. Eggs are laid in the water of ponds, slow moving rivers and surrounded in a jelly like frog spawn. The larvae are all aquatic and breathe by gills.



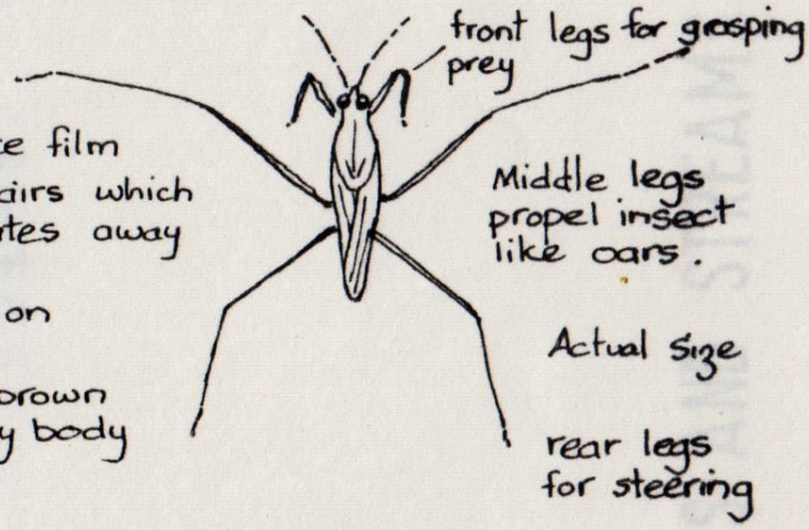
Protective cases with larvae inside moves on bottom of ponds - cases made from sand, leaves, twigs, tiny snail shells. etc.

Larvae - vegetarian or carnivorous according to species

Caddis is a name for a Pedlar who carries his wares hung from his clothes.

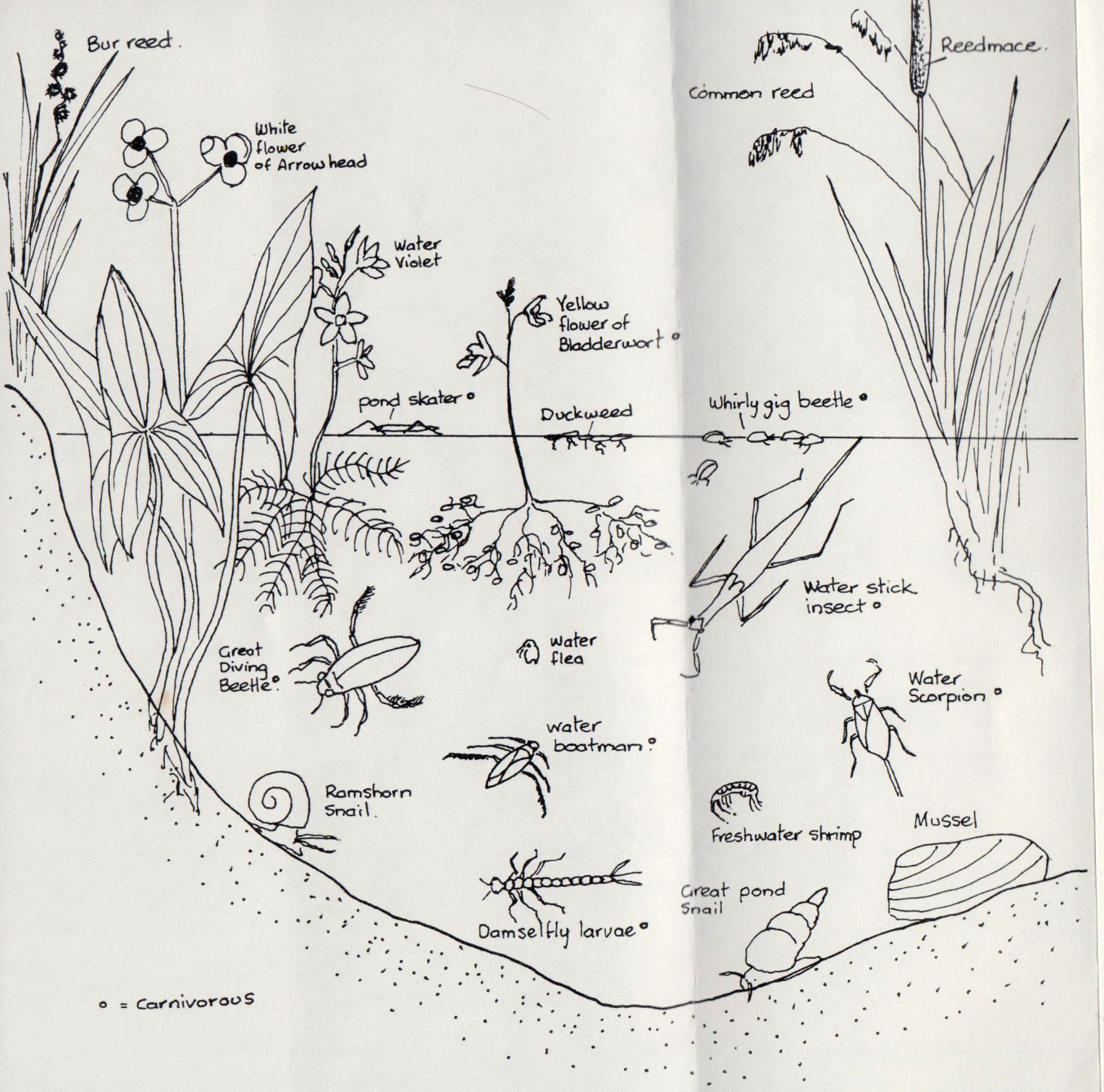
POND SKATER *Gerridae*

Skates fast on water surface film feet is adapted with fine hairs which are water repellant - hibernates away from water in winter
Feeds on insects stranded on water surface.



QUESTIONS

1. What is an Eft? .....
2. What are desmids? .....
3. Male newt with webbed feet? .....
4. Newts lay eggs in lines or chains
   True or false? .....


Bur reed.
White flower of Arrowhead
Water Violet
Yellow flower of Bladderwort °
pond skater °
Duckweed
Whirly gig beetle °
Common reed
Reedmace.
Water stick insect °
Great Diving Beetle °
Water flea
Water Scorpion °
water boatman °
Ramshorn Snail.
Freshwater shrimp
Mussel
Great pond Snail
Damselfly larvae °
° = Carnivorous

INDEX TO WOODLAND HABITAT

(illus.) = illustration only

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